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YACHTING

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POWER SURFBOAT READY FOR LAUNCHING FROM THE BEACH

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The Power Boat in the Life-Saving Service

What the Advent of the Gasolene Motor in This Service Has Contributed Towards the Saving of Life. Scope of the Life Boat Doubled. Some Thrilling Rescues

By WALDON FAWCETT

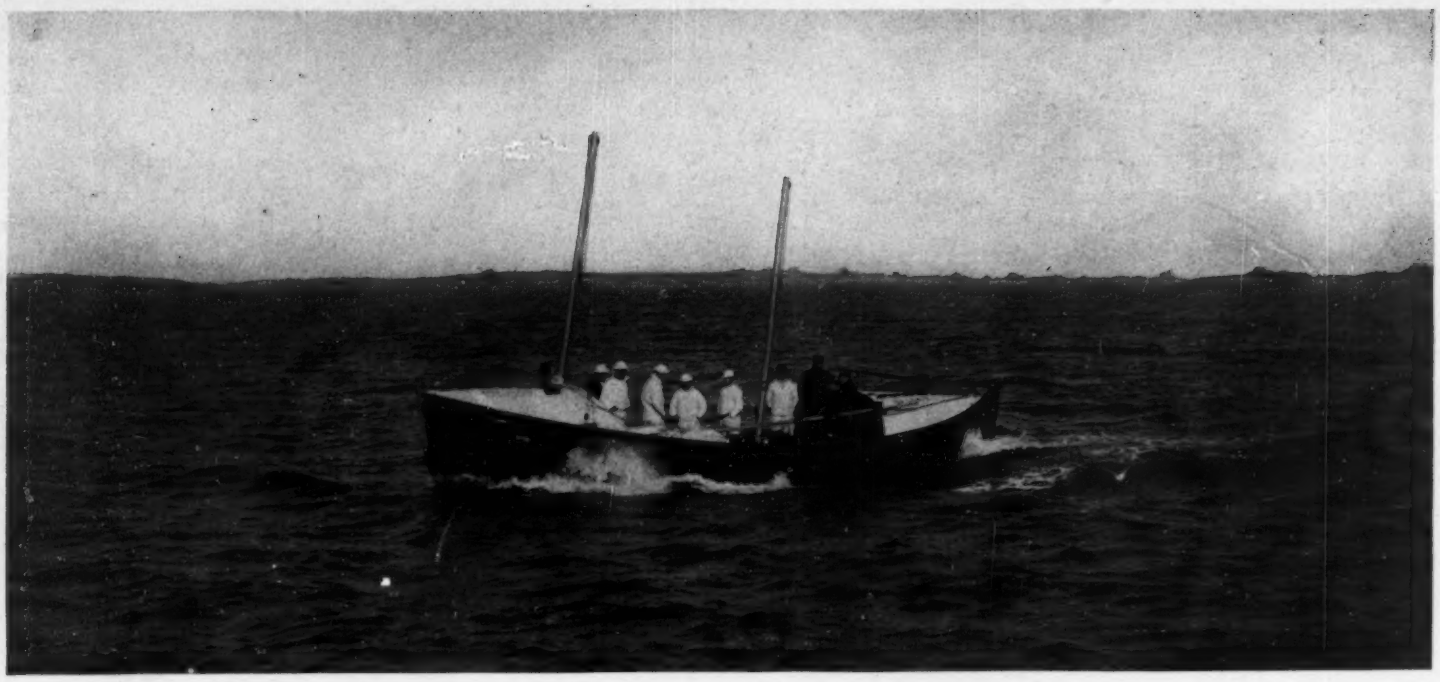
Photos by the Author, Capt. Kenyon, of the Brenton Point Station, and J. Rendall Wilson

IN no sphere of maritime activity has the modern motor boat made a more complete conquest than in that of life-saving craft. With equal emphasis it may be asserted that no new factor that has appeared in life-saving practice in several decades has proved so revolutionary an influence as the power boat especially designed for rescue work. Already the United States—which leads the world not only in the extent of the utilization of the motor boat for life-saving work, but also in the measure of success which has attended the innovation—has in service more than one hundred power life and surf boats, and this number is being constantly increased.

Perhaps it is almost superfluous to point out to readers conversant with boating conditions the advantages which the power boats possess in life-saving and salvage work. By means of them the scope of life-saving operations has been greatly extended—the superintendent of the service says that it has been fully doubled—at all stations where these boats are employed. The life-saving crews are enabled to respond more quickly to distress calls and to cover long distances more speedily and more safely than was possible in the past. Another important advantage, overlooked in many instances, is that the use of the power boats enables the life-saving crews to reach scenes of disaster in the best of physical condition for the performance of difficult and perilous work instead of in a state of exhaustion, as they must be if compelled to row a heavy boat a long distance as a prelude to actual rescue work.

Although the power life boats and power surf boats have been in use for a comparatively brief length of time they have already to their credit many difficult achievements in rescue work. And not the least interesting feature of the record is that the life-saving captains, in their confidential reports to the officials in Washington, have repeatedly testified that the motor boats have made possible relief operations that would not have been possible with any of the older types of boats or life-saving apparatus.

Thus, in the case of a wreck near the Creeds Hill Station in January, 1912, the captain reports that it would have been utterly impossible for a boat under sails or oars to have reached the wreck; and he expresses grave doubt whether any boat not equipped with an engine could have even been launched in the face of the terrific seas. Similarly, in the case of the wreck of the sloop Pearl a few years ago the captain of the Fort Point, Cal., Life-Saving Station wrote: "Had it not been for the power lifeboat these men would have undoubtedly been lost, as no crew could have stemmed the strong ebb and heavy freshet prevailing at the time with oars alone."



THE IDA LEWIS OF THE BRENTON POINT STATION AT NEWPORT. NAMED AFTER THE FAMOUS LIGHTKEEPER

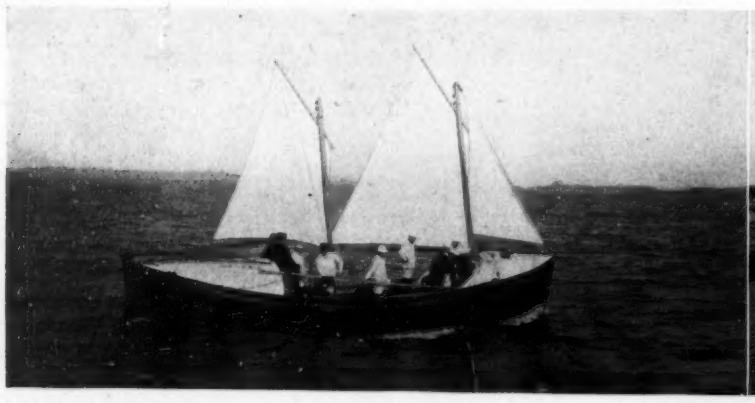
One of the most remarkable examples of the power of the 36-foot motor life boat was given when the large steamer Brasoria was discovered, rudderless and disabled, off the New Jersey coast. The power life boat Vigilant went to her aid from the Atlantic City Station and succeeded in towing the large vessel into port. At the Cape Disappointment Station the power life boat has been used recently in three different rescues, in each of which a boat was towed from a dangerous position. In one instance the motor life boat reached an imperilled boat four miles away in a total elapsed time of 35 minutes, though three hours was required to tow back the succored fishing craft.

The motor life boat was subjected to one of its severest tests on that autumn day when the life-saving crew at the Wood End Station, on Cape Cod, responded to a call to lend aid to a schooner reported in peril down the coast with 23 men in the rigging. When the power boat, after a three-hour run, reached the scene, it was found that a United States revenue cutter was standing by to give aid, and forthwith the power boat turned about and started on a 20-mile run home, dead to windward. The captain said that it was the roughest sea he had ever encountered in Cape Cod Bay, but the motor boat acquitted herself splendidly and the engine did not miss a spark on the entire trip.

Another notable rescue on the New England coast was that made by the motor life boat Valorous, which, in the discharge of this duty, made the run of 75 miles from Gloucester to the Monomoy Point Station in the face of a heavy sea. It was during this rescue that the life-saving captain managed the life boat single-handed, all the members of his crew being on board the succored schooner engaged in pumping. Perhaps the most notable rescue which the power life boat has achieved was that of the crew of the German steamer Brewster on Diamond Shoals, off Cape Hatteras. For this rescue the life-savers were rewarded by both the American and German Governments. In this instance 16 men were rescued under the most trying conditions of wind and wave.

In a number of instances the power life boats have demonstrated their ability to carry a surprisingly large complement. In the case, for instance, of the wreck of the steamer John C. Pringle near Cleveland the power life boat took off 10 men and 1 woman, and then the 34-foot craft, with 19 men aboard, had to smash her way back against a strong wind. In the case of the wreck of the ship Norwood, a couple of years ago, the captain of the Cobb Island Life Saving Station took aboard 11 men and then made a run of 10 miles dead to windward in a heavy head sea, the weather being bitterly cold.

For all that the motor boat has brought so complete a transformation of life-saving practice it cannot be said that it came as the fulfillment of the proverbial long-felt want; or, at any rate, the want, if it existed, was not generally recognized in this field. Naphtha and Alco launches there were in abundance long before the appearance of the motor boat of to-day, and the United States naval service was then, as now, making extensive use of steam launches; but none of these types of power boats seriously suggest themselves to American life-saving authorities as a substitute for the boats dependent for propulsion upon the wind and human brawn.



THE IDA LEWIS UNDER SAIL AND POWER. HER CAPTAIN SAYS THAT SHE IS THE BEST SEABOAT EVER BUILT

THE BRENTON POINT STATION, SHOWING COVE AND MARINE RAILWAY FOR LAUNCHING THE POWER LIFE BOAT

It is only fair to say that this conservatism, if such it may be called, was not shared by all other nations. The Royal National Lifeboat Institution of Great Britain during the closing decade of the last century resorted to steam as a motive power for life boats. However, in order to make use of steam for such purpose the self-righting qualities of the boats had to be sacrificed, and all American authorities regarded this self-righting attribute as a quality so important to preserve that they were unwilling to even consider any form of power that

WATERTIGHT COMPARTMENT IN WHICH THE MOTOR IS INSTALLED, CONTROLS BEING ON BULKHEAD, OUTSIDE

carried with it such a penalty. In other words, they saw no advantage in a power life boat unless it was a self-righting and self-bailing power boat.

The rapid development of the motor boat suggested that there might be possibilities in the gasolene engine, or in the electric motor, and, accordingly, early in the year 1899 the United States Life Saving Service took up in earnest the problem of the application of mechanical propulsion to its life boats, and in April of that year the first gasolene motor was installed in a 34-foot, self-righting and self-bailing life boat at the Marquette, Mich., Station, the motor being placed in the after air chamber. The trials with this initial converted boat were so successful that power was installed in a second boat, some improvements being incorporated as the result of the lessons learned in the first experiments.

Gratifying results also attended this second experiment, and, in order to give the whole proposition thorough and systematic consideration, there was formed, under government auspices, a special com-

ONE OF THE POWER LIFE BOATS ON THE GREAT LAKES

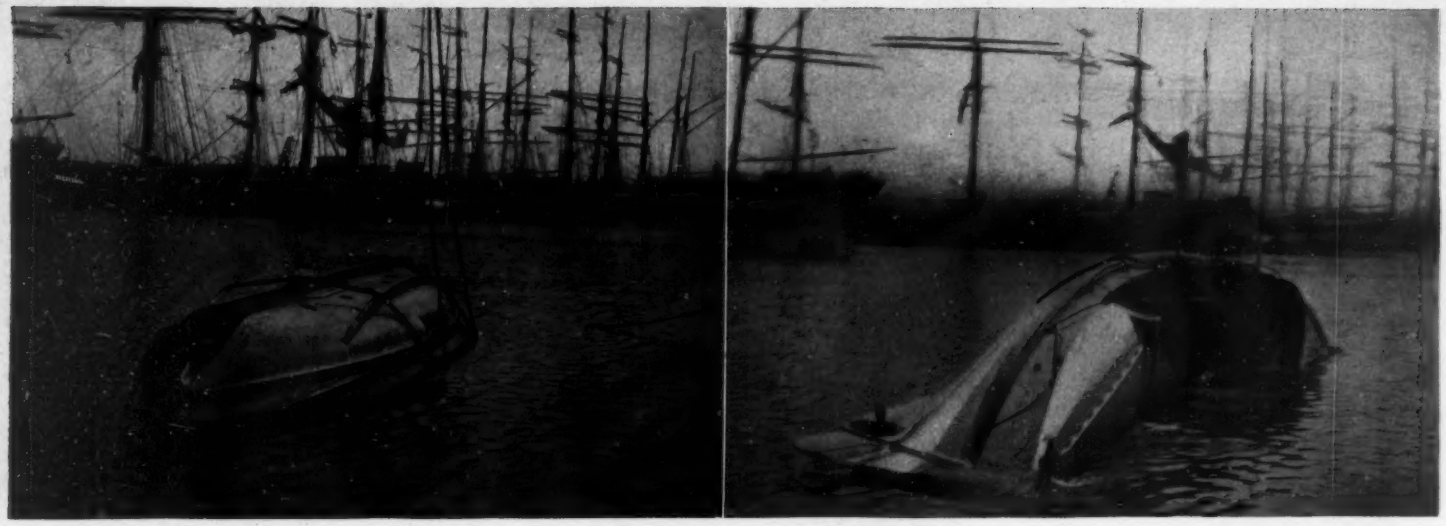
mission on the mechanical propulsion of boats, this commission being composed of experts in the field, headed by Prof. C. H. Peabody, of the Massachusetts Institute of Technology. The outcome of the investigation by this commission was a recommendation for the installation of motors in all large life boats belonging to the Life Saving Service.

The policy thus entered upon has been consistently followed until now, after a dozen years, we find a cordon of power life boats all along our coasts and a determination on the part of the officials that all new life boats built for or added to the service shall be of the power type. At this writing the converted and specially constructed power life boats are somewhat unevenly divided. There are in service at the present time forty-two of the 34-foot power life boats, and all of these, except two, are old boats in which motors have been installed. On the other hand, the entire twenty-eight power life boats of the newer 36-foot class were especially constructed with motors installed at the time of building. These latter are the type of boat which will prevail in the future, and it is now the plan of the Life Saving Service to depend upon new construction for power life boats and to convert no more old boats..

LAUNCHING A POWER SURF BOAT. INSERT SHOWS HARTHAN PROPELLERS FOLDED BACK AGAINST HULL FOR PROTECTION IN LAUNCHING FROM BEACH

THE SPRAY HOOD WITH WHICH ALL BOATS ARE EQUIPPED

In many references to the subject there is a failure to differentiate between life boats and surf boats. The latter are in a class by themselves, and because special problems were involved the advent of the successful



CAPSIZING TESTS OF ENGLISH POWER LIFE BOATS

power surf boat was delayed until some time after the power life boat had won a place in standard life-saving equipment. The nature of the special problems involved may be surmised when it is explained that the power life boat, weighing thousands of pounds, is kept, at the average life-saving station, in a slip, at anchor, or is run up on shore on a marine railway, which, in launching, lets it slide directly into deep water. The lighter-weight surf boat, on the other hand, is designed for launching under almost any conditions that may be imagined. It may be put into the water with the aid of rollers, and, more often than not, is launched on a shelving beach. In not a few instances the surf boat must, as a preliminary, be transported overland by means of a boat wagon to a favorable point on shore. Under such circumstances, obviously, it must be put into the water without the assistance of launching apparatus of any kind and without even the exercise of any special care in handling.

ENGLISH POWER LIFE BOATS ARE LARGER THAN AMERICAN, AND CARRY MORE SAIL

The use of motor boats by the fishermen along our coasts had demonstrated the ability of power boats for work in certain conditions of surf, but there were unusual circumstances to be taken into consideration in the case of surf boats destined for rescue work. Finally, the problem was solved by the designing experts of the Life Saving Service producing a type of self-lifting propellers, which have become the most distinctive feature of the power surf boats constructed in recent years.

The propellers of this type are attached to adjustable propeller shafts moving vertically in slots, and can be drawn up in a protected position snug against the sides of the boat when the craft is resting on the beach or in any position that might imperil the propellers in their normal positions. But once the power surf boat is in the water, the propellers may be dropped into the normal operating position. In landing through the surf the operation is reversed, and as the boat comes into shallow water the outboard shafts carrying the propellers are, by means of the universal joints, folded snug against the hull of the boat.

There are now in service at United States life-saving stations a total of 39 power surf boats. None of these is a converted craft, but all were especially built with engines installed, with the propeller adjustment above described and with the self-bailing

(Continued on page 60.)

THE NEWHAVEN POWER LIFE BOAT. THESE ENGLISH BOATS ARE 42 FEET IN LENGTH

THE CORINTHIAN YACHT CLUB OVERHANGS THE WATERS OF MARBLEHEAD HARBOR, SO THAT RACES MAY BE STARTED FROM THE CLUB VERANDA

The Corinthians of Marblehead

One of the Foremost Racing Organizations in the United States. A Believer in the Small Boat Sailor, it is Largely Due to Him That the Club Has Achieved Its Success. An Interesting History Connected with Many Important Events in Yachting

By GEORGE STORY HUDSON

Photographs by the Author, Commodore C. B. Wheelock and W. H. Joyce

THE Corinthian Yacht Club of Marblehead, one of the best-known racing organizations in the United States, has been builded by fostering small boats.

Ever since the club was organized, back in 1885, its slogan, "Give the small fry a chance!" has permitted almost everything that floats to try for honors. Believing that in the loyalty of the man who handles his own craft lay their strength, and conscientiously working along these lines, the Corinthians now reap results and continue to broaden a sportsmanlike policy.

A gratifying record was achieved during the mid-summer series of 1912, when 184 racing boats were started in one day. For the four days of this regatta there were about 700 starters. During the past season 1,000 boats started, against 759 in 1911, an increase of 241.

These figures tell the story of the club's popularity. No yachting organization, no matter how long it may have been in existence, can succeed in getting together so imposing an array of craft unless there be something compelling in its make-up. The mid-summer carnival has been featured many seasons; each recurring summer brings more boats, and, judging from precedent, next August should find upwards of 200 sailboats figuring in the summary of one race.

Believing, also, that in learning to handle their boats at sea under all conditions one gets the most good from the sport, long-distance racing has been favored by the Corinthians with gratifying returns. Almost everybody along the Atlantic coast who has to do with yachts knows about the Isle of Shoals event, the Cape Cod Race, the Bermuda Race, and other important contests that have attracted general attention.

But the mid-summer series, in its novelty, appeals, perhaps more strongly than anything else, to the rank and file of New Englanders, whether they be yachtsmen or only laymen. When it is recalled that from 1,200 to 1,500 men participate in a race where nearly 200 boats compete it may readily be understood that the "folks at home" take keen delight in what is transpiring.

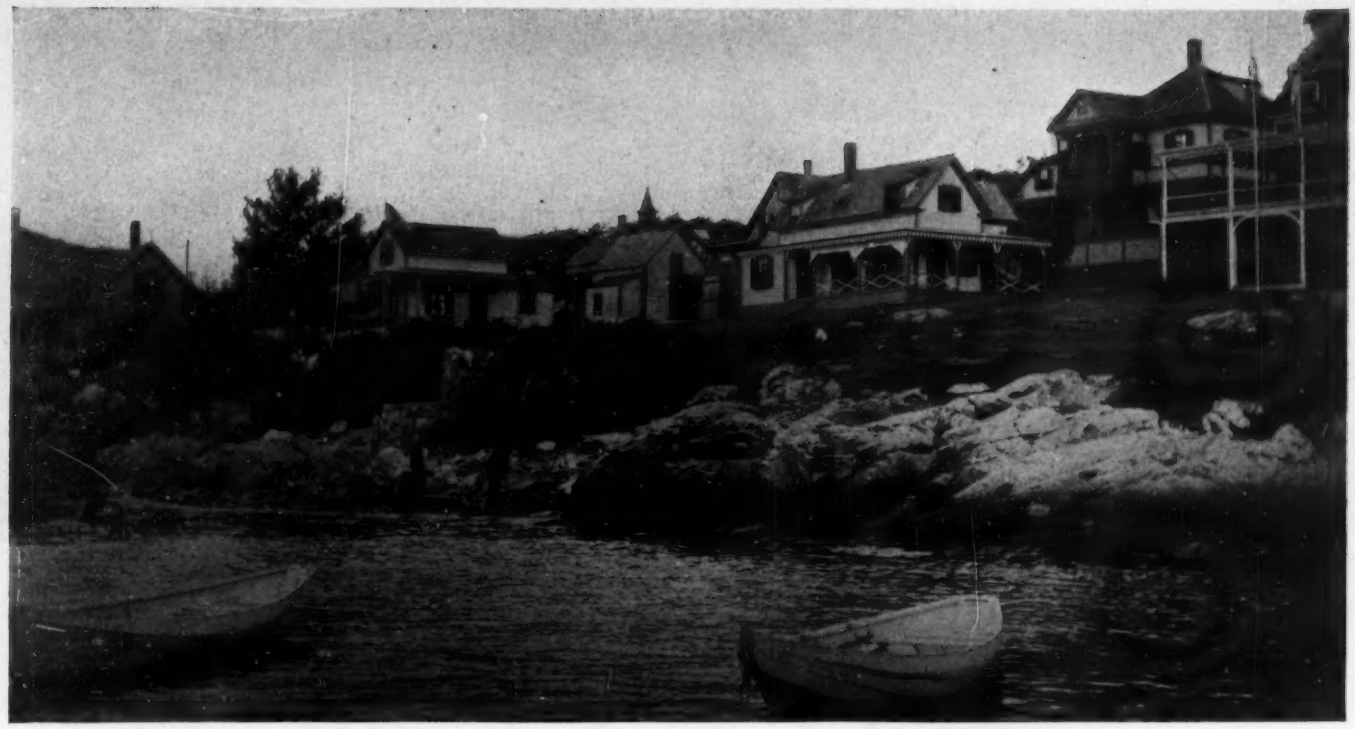
Location may have an important bearing on the success of the Corinthian Yacht Club, but that isn't all, by any means. Racing men who have visited Marblehead and the Corinthian club-house are struck by the democratic spirit permeating the place and the true ring of the members, with whom it is a privilege to get down to a game of talk anent waterlines and over-alls. There are yacht clubs that seclude its diners behind screens in corners, as if intolerant of their fellows. Not so with the Corinthians, and such a procedure would be regarded as heresy, or something equally objectionable, to the great majority of the 540 members.

Assuming that the Corinthians are best loved in home waters for the mid-summer series, let's look back and see how the festival came to be. It was in 1903, I believe, that the club elected a regatta committee from among its younger members. At that time the annual fixtures included an invitation race that brought together a few important classes from the larger organizations.

Herbert S. Goodwin, present secretary of the Corinthians, was chosen chairman of the regatta committee in 1904, and William L. Carlton, secretary. Both were racing men, who felt that the club might easily advance to premier place by increasing the number of classes provided during the carnival week, thereby enhancing its usefulness and furnishing incentive for amateurs to visit the port. The regatta committee was practically spontaneous in adopting the carnival idea, and the first open invitation event brought 60 starters in one day. Racing with the Corinthians up to that time had been at comparatively low ebb, and the success of the carnival encouraged greater effort for the coming season.

The August race week was thus inaugurated. Now there is no need to press-agent it, because the 30 or so clubs along Massachusetts Bay have a habit of putting rings round the dates on their calendars and plan to be there with the duffle. Hundreds of yachtsmen arrange vacations to coincide with the Corinthian series. It's "Go to it" with skippers and crews, and preparations are in the making months before the actual time arrives. Should this festival be stricken from the racing chart there'd be a storm of protest from the lily-fingered tars of the old Bay State.

The aspect of Marblehead changes over night on the eve of race week, when the Corinthians have things ready and right at Fort Martin, as the gun platform is called. The harbor may shelter 150 yachts (the regulars and a few cruisers) as opening day of the series draws near. Then, as by magic, dawn preceding the first contest reveals 400 or 500 yachts tethered to anchors and so thoroughly blocking the harbor that ferries experience much difficulty in steaming between town landing and floats at the Neck. About every type of craft finds place in the fleet that has come



THE FIRST HOME OF THE CORINTHIANS. THE TWO HOUSES AND THE SHED IN THE CENTER OF THE PICTURE ARE WHERE THE CLUB STARTED IN 1884

to share the fun. Luckily, gales are not frequent in August in this latitude to disrupt the little fellows nested so close that they foul in a calm and form a nodding bridge across which one might almost make his way to shore dry shod.

Clubs arrange runs to Marblehead for the series, and the start of the squadrons is made the Sunday that ushers in the week. At Bass Point, Nahant, six or seven miles from Marblehead, the boats rendezvous for a racing run under auspices of the Inter-Club Yacht Racing Association of Massachusetts right down to the Corinthian's front door. In order to make the run more interesting a 14-mile course is set with triangle base in Nahant Bay. Sail and power craft compete, seventeen prizes having been awarded in as many classes last year.

Most of the clubs on Massachusetts Bay offer prizes for winners in the run from home waters to Marblehead—another good thing for which the big organization that fosters the small fry is directly responsible. Bunches of racers foregather from every nook and corner between Newburyport and Cohasset, the sail craft convoyed by motor boats that pass a line when calms stall or heavy winds threaten gear. So, by Sunday night, Marblehead is swarming with yachts of racing type or of nondescripts that come to witness the goings on.

By location the Corinthian Yacht Club finds it easy to start a regatta without bothering with committee boats and other impedimenta. Situated on the Neck, almost under the shadow of Point Light, it is only around the granite ledges to the open bay. Off the house two big white buoys are moored, and the regatta committee does its work from the veranda. The chronometer and telescope, guns and cones, therefore, are safe from perils of the sea, and the committee, in case of bad weather, is most comfortably ensconced in an eyrie that neither rocks nor rolls.

Inside and outside courses are available for the Corinthian races, and the ocean outside Marblehead Rock is a vast battlefield. No matter what the wind's direction, there's plenty of room—straight away to Lisbon, if need be. For small craft, like the tiny one-design, a course inside the islands is frequently selected, as it gives smooth water and obviates a mix-up when a large fleet is being handled. And the courses, however set, are in full view from the Point or club veranda. A two-minute walk from the house unfolds the open bay, historic in yachting annals.

Let's look at some of the classes that started at three-minute intervals on the last day of the Corinthian series of last year: Regular classes: 46-foot class M; 38-foot class N; 31-foot class P; 25-foot class Q; 20-foot class R; 17-foot class S; first special class yachts, yachts 35 feet L. W. L. and over; second special class, yachts under 35 feet L. W. L.; sonderklasse, conforming to rules of the German-American races; 18-foot knockabout class, of the Eighteen-Foot Knockabout Association; catboat class, of the Cape Cat Boat Association; dory class, of the Massachusetts Racing Dory Association; 15-foot class, of the Annisquam Yacht Club; Manchester one-design class; Nahant "bug" class; Eastern Yacht Club one-design class; Corinthian Yacht Club one-design class; Duxbury 15-foot class. Inter-club classes: Class A, pole-masted cabin yachts over 26 feet racing length;

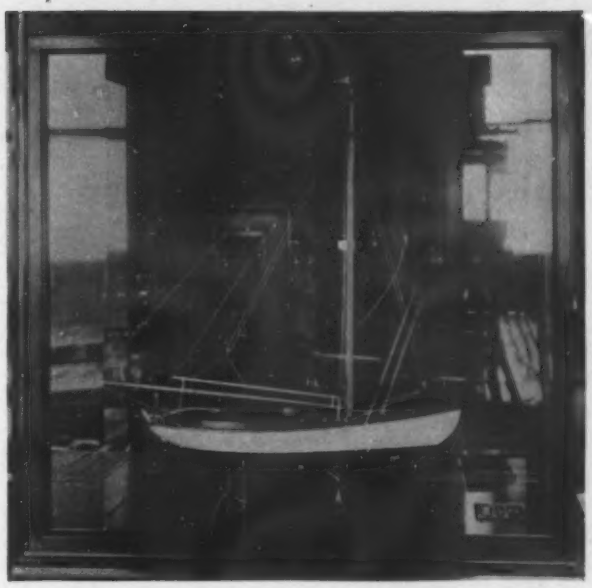
THE HALL AND OFFICE

THE BROAD VERANDA OVERLOOKING THE HARBOR

BILLIARD ROOM

class B, pole-masted cabin yachts under 26 feet racing length; class C, topmast cabin yachts; class S, open yachts; class H, handicap.

Chairman Carlton, of the Regatta Committee, has his work cut full-and-bye on carnival days. It's "Where's Billy?" or "Ho, Billy!" and the genial Billy's smile never fades, even if he doesn't get his watch below for a stretch of 96 hours. The Regatta Committee has systematized the figuring of summaries into a veritable work of art. Nowhere along the coast is that duty attended to more accurately and with so little wear and tear on tissue. Methods employed in handicapping are just and, almost invariably, satisfactory to those most vitally interested. A disgruntled skipper during race week seldom thrusts head within the chart room, where times are figured and most of the business incident to the carnival is conducted.



MODEL OF JANE, THE SECOND KNOCKABOUT TO BE BUILT. THE CORINTHIANS DID MUCH TO CREATE INTEREST IN THIS WHOLESOME TYPE OF SMALL BOAT

The Corinthian Yacht Club had a small beginning in 1884, with Benjamin W. Crowninshield as Commodore. Two cottages near the site of the present club-house were rented. The buildings were recently torn down to make room for the handsome residence of Commodore Wheelock. Eighty-four names appeared in the membership list for 1885, and about half were yacht owners. The initiation fee was 0; dues, $2—cheap enough, eh? In 1888 the site of the present club-house was purchased, Commodore Crowninshield advancing money for the purpose. Interwoven with these earlier days are names of other men whose devotedness to the sport and assistance in times of financial stress proved a bulwark.

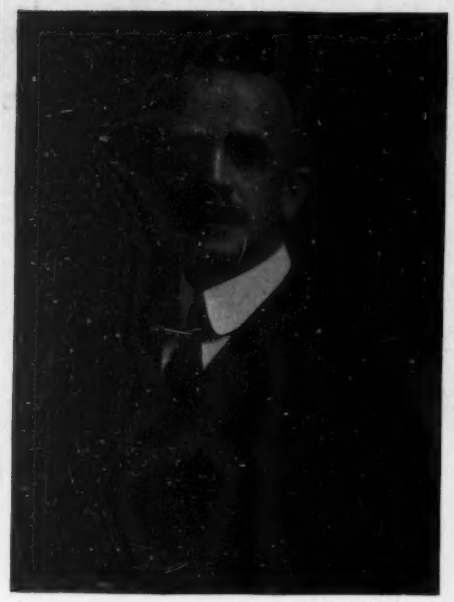
The two cottages soon proved inadequate, and a modest club-house was erected; but that, too, was quickly outgrown. The present magnificent home was erected in 1897 at a cost of $20,000. The incorporators, in 1888, whom I almost forgot to mention, were: B. W. Crowninshield, J. B. Rhodes, I. S. Palmer, Everett Paine, F. E. Peabody, W. S. Eaton, Jr., G. A. Stewart, G. W. Tyner, C. H. W. Foster. Most of the early boats have disappeared, some through storm, others by the ravages of time. The Tomahawk, a 40-foot steel sloop of Burgess design, was the first flagship. Her bones were laid on Cape Cod long after she had passed to other hands.

America's Cup defense dominated the country when the Corinthians were a comparatively tiny band. Edward Burgess was a club member when becoming famous as a designer. He served on the Regatta Committee at intervals, and raced in the Kittie and the Nimbus. Gen. C. J. Paine, one of America's best-loved yachtsmen, worked for the club's advancement. G. A. Stewart, naval architect and writer on yachting topics, was there, too. Stewart's Cup defense candidate, the sloop Pilgrim, was a radical innovation. Gen. Paine's Jubilee now rusts at Marblehead behind a yacht shed where W. Starling Burgess, son of the designer, is building aeroplanes. The Pilgrim, having emerged from many vicissitudes, long outlives the genius who fashioned her, and is now a fishing vessel, with headquarters at Beaufort, N. C., with gasolene motors that propel her faster than she ever went with the steam outfit that originally supplanted sails.

Irving S. Palmer was first Vice-Commodore of the club, a position he held many years. Mr. Palmer sailed in the catboat Enigma, and then built the steam yacht Eugenia. Everett Paine, first Secretary, sailed the sloop Vera. He was secretary up to 1904, a term of service that surely evidences his capability.

Another striking figure in the club's early days was John B. Rhodes, Treasurer, whose means were liberally given toward the enlargement of the organization's scope. He owned the 25-foot

THE PRESENT FLAGSHIP AMORET, LEADING WINDWARD IN THE INTER-STATE TEAM MATCH OF 1911



EX-COMMODORE HENRY A. MORSS, WHO DID MUCH TO ENCOURAGE OCEAN RACING

THE PRESENT COMMODORE, CHARLES B. WHEELOCK

WILLIAM H. JOYCE, WHO FOR MANY YEARS HAS HELPED TO MAKE THE CLUB WHAT IT IS

sloop Annie, a good, all-round boat. C. H. W. Foster had the sloop Camita. Later, he brought out the raceabout Cock Robin. Now he owns the sea-going auxiliary ketch Autocrat, and his sonder boats have figured in international matches since foreigners have believed their small craft faster than those of American design.

Other yachtsmen identified with the sonderklasse who cast lot with the Corinthians as young men are Charles Francis Adams, 2d, whose Harpoon, till last year, was invincible, and Charles P. Curtis, who, with the Ellen in 1912, downed the Adams craft in a series for the Quincy Challenge Cup, winning the trophy for the Boston Yacht Club. These men are to have new sonders as candidates for the team that will meet the Germans off Marblehead in 1913.

The imposing home of the Corinthians welcomes one to the harbor, it being the first when approaching from the sea. Founded on a cliff, its broad veranda overhangs the harbor and affords a view as from the deck of a liner. Northward lies islet-strewn Salem Bay, with Beverly and Manchester bathed in haze along a shimmering shore up which verdure climbs. Directly across the harbor sits the historic town, quaint in architecture and thoroughfare, redolent of prosperous generations. Southward, the woods of Swampscott, the bristling ridge of rocky Nahant, and, nearer, the barren, foam-fringed reefs and the Outer Breaker's clanging bell.

The second floor of the building—and the second is really the first floor when entering from the drive—provides a spacious dining hall with two sides facing the water. The library occupies the southwest corner. Here are treasured trophies, paintings, and models; and the generous fireplace invites a journey, in memory, to other racing days. Across the wide corridor opening from the building's front is the billiard hall and more paintings and models, including those of Puritan, Mayflower and Volunteer. The annex, recently placed in commission, is fitted with nearly 400 lockers, and is entered from the billiard hall or office. In the chart room stands a broad chest of shallow drawers, flanked by a semi-circle of ample, leather-covered transoms. A ship's riding light, itself replete with history, swings from the ceiling and lends a touch of the sea.

WILLIAM L. CARLTON, WHO, AS CHAIRMAN OF THE REGATTA COMMITTEE, MADE THE CORINTHIAN REGATTAS THE BIGGEST IN THE UNITED STATES

The third floor is given over to sleeping rooms, which are occupied during the summer by members or guests.

Returning briefly to men and boats, the names of William H. Joyce, chairman of the house committee, and Lawrence F. Percival, a rear-commodore, spur one's racing blood. Mr. Joyce built the 22-foot sloop Tyro in 1905, capturing the championship that year and the following. The Tyro was sailed by Sumner H. Foster, a yachtsman of rare skill and courage. In 1907 Mr. Joyce built the sonder Marblehead, the boat being picked as one of the team to meet the Germans at Kiel. Mr. Percival owned the long string of sisters called Sally. He raced the Gee Whiz, a little thing, when the Corinthians were young. His first real power cruiser also was called Gee Whiz, the Sallys coming between in almost annual sequence. Mr. Percival now has the fast cruiser Barracuda; but, I am told, he longs for a sailing craft again and may hie back to the sheet and tiller.

In the library a model of a 21-foot knockabout—Jane—carries one back to days when the type first sprang into such deserved popularity. This model of the Jane, a beautiful piece of work, attracts a great deal of attention. The boat was owned by Herman Parker till two years ago, when she was broken up for the lead and other metal used in her construction. She was second boat of the type to be built, in 1892, the Nancy being the first. Henry Taggard, secretary of the Eastern Yacht Club at the present time, owned the Nancy. To Mr. Taggard belongs the credit of introducing the type. He had owned a big catboat, which drove him into a hunt for a boat that didn't have a big sail and was not awkward for one person to handle in a tideway. The old Galway sloops, then numerous at T Wharf, Boston, and one of Tucker's lapstrake ferries, the Phil Sheridan, proved his inspiration, and Designer Stewart whipped the idea into shape. Higgins & Gifford, of Gloucester, constructed the first lot of knockabouts, and Mr. Taggard was chosen president of the Knockabout Association. The Nancy is now in storage at the Fenton Company's yard, at Manchester. She has been used pretty much every season up to two years ago, and is in splendid condition.

(Continued on page 58.)

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The Ideal Two-Man Cruiser

The Best Boat for Offshore and Coastwise Cruising That Can be Handled by Two Without the Services of a Paid Hand. Ability, Ease of Handling and Most Comfortable Living Accommodation Obtained in 29-Feet Waterline

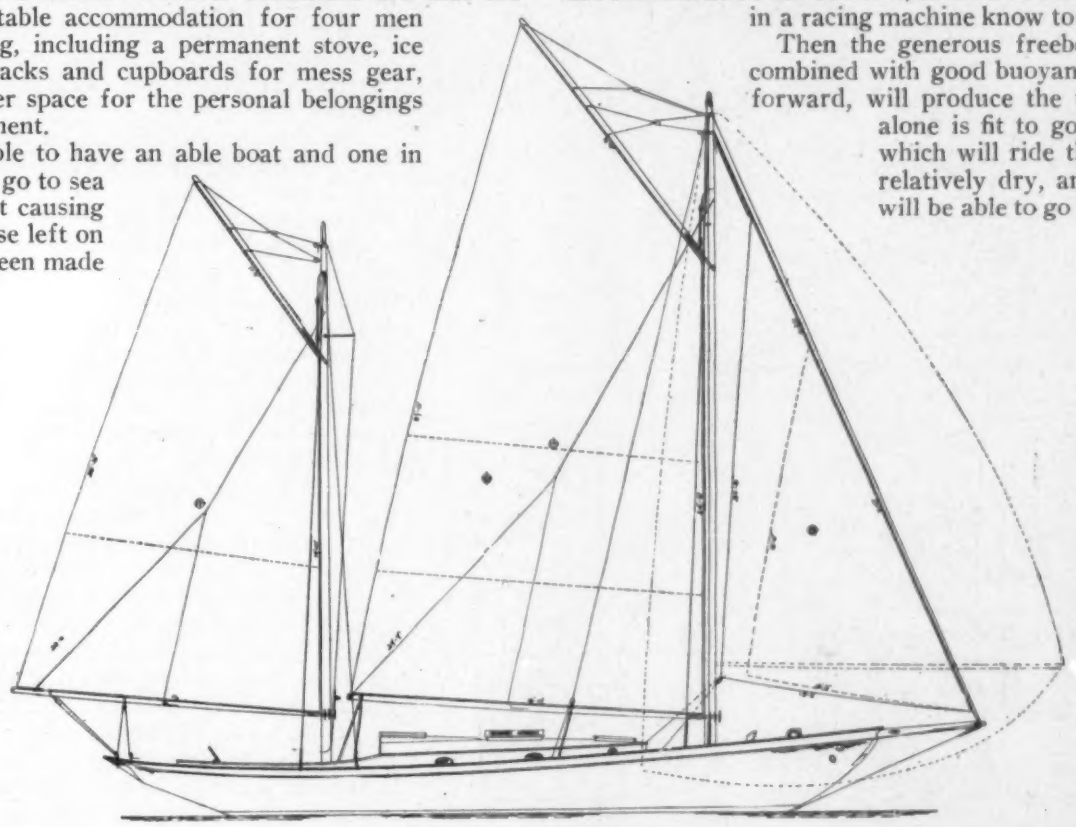
By JOHN ALDEN, N. A.

[*This is the second of a series of articles on the Ideal Boat of various types, both power and sail, written especially for* YACHTING *by various naval architects, and expressing in the plans the highest conception of the designer of the boat discussed.*—EDITOR.

FOR the man who wants rather more boat than can be secured within the limits of the single-hander described in the last issue of YACHTING, and yet who prefers to dispense with the services of a paid hand and cruise with two or three of his friends, the accompanying plans have been prepared as an ideal design. This boat might properly be termed a "two-hander," as one of the stipulations made to the naval architect was that she should be capable of being sailed, reefed and handled in every respect by two men in a watch. Further conditions are that she should have comfortable accommodation for four men for extended cruising, including a permanent stove, ice chest, sink, proper racks and cupboards for mess gear, and also ample locker space for the personal belongings of the ship's complement.

While it is desirable to have an able boat and one in which the owner can go to sea for long runs without causing undue anxiety to those left on shore, an effort has been made to avoid freak types or the extreme "chunkiness" of a vessel designed primarily for long deep-sea voyages.

What I have attempted to turn out is not an exploring ship or a Nova Scotia pilot vessel, but a comfortable, able little cruiser which will appeal to the average yachtsman who wants the most for his money in the form of an all-around boat which will be equally in her element going to Bermuda or Newfoundland, or cruising in Long Island Sound.



SAIL PLAN OF THE IDEAL TWO-MAN CRUISER

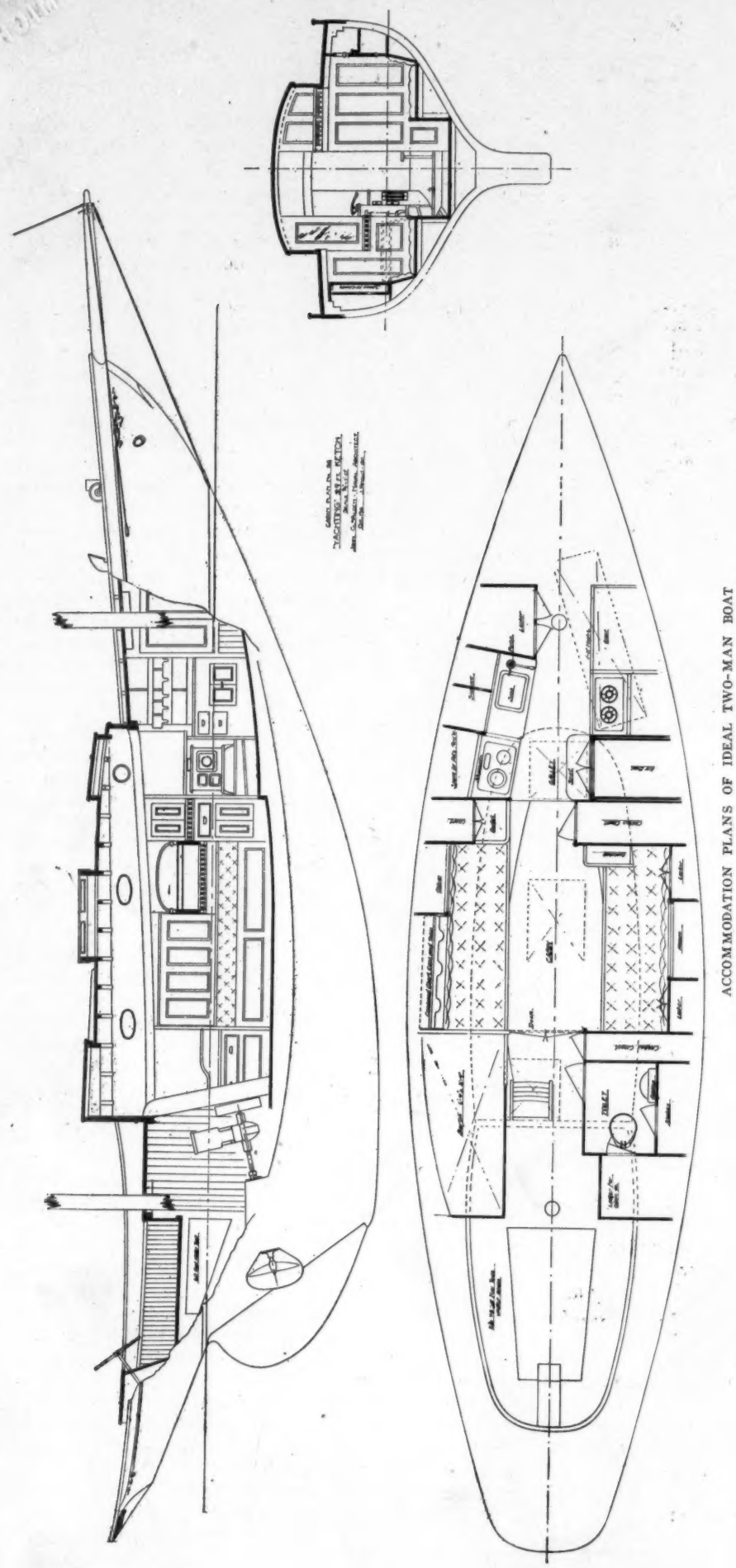
She should not, however, be confused with many of the so-called "cruising yawls," with long overhangs and all-outside ballast, which sail "on their ear" in anything over a 15-knot breeze and would pound themselves open in a summer gale on Georges. Such boats are merely racers in disguise, and bring speedy disillusionment to the trusting smooth-water sailor who attempts to take them to sea. On the contrary, the present design is that of a good, able, little sea boat, and yet one which, owing to her easy lines, will prove a good sailer in anything but very light airs, when the engine will drive her faster than the addition of bothersome light sails could do.

The principal dimensions are as follows: Length over all, 41 feet 6 inches; length, waterline, 28 feet 10 inches; beam (extreme), 10 feet 6 inches; draft, 6 feet; freeboard (bow), 4 feet 6 inches; freeboard (least), 2 feet 6 inches; sail area, 900 square feet; ballast, 7,000 pounds outside, 800 pounds inside. A study of these figures in connection with the lines and sections brings out some interesting features. In the first place, note that, while the underbody is finely molded, with easy entrance and smooth run, it has not been found necessary to carry the hull out in excessive overhangs. Moreover, the 'midship section shows a generous submerged area, with bilges sufficiently hard to insure the boat's sailing on her bottom instead of on her side, a very important consideration for comfort, as all who have attempted to cruise in a racing machine know to their sorrow.

Then the generous freeboard and easy sheer, combined with good buoyancy and easy entrance forward, will produce the type of vessel which alone is fit to go to sea—that is, one which will ride the seas easily and be relatively dry, and, at the same time, will be able to go to windward through a head sea and wind. A boat which fails on either one of these counts is manifestly not a safe one in which to take the high seas, especially if one wishes to cruise on a coast where harbors are infrequent and where it will sometimes be necessary to claw off a lee shore.

It is difficult to say which is the most dangerous proposition for such work—the boat which is so fine forward that she dives bows under into a head sea (like the old English cutters) and takes everything on deck, or the high-sided, tubby-bowed affair which will heave-to beautifully and not take a drop of water on deck, but which no amount of sail or power could force to make any progress against a head sea. Obviously the ideal type of hull is one which will, so far as possible, combine the two very desirable features of seaworthiness and ability to go to windward: herein lies the most important criterion of any seagoing cruiser. An inspection of the accompanying lines and profile will show how I have attempted to secure these qualities by keeping the forward sections buoyant and the lines of entrance easy—both at the same time. The reader wil pardon my dwelling upon this point at some length, but it is a matter of the greatest importance, as all practical sailormen know.

Looking at the other end of the vessel, we see a stern which is fairly enough molded to leave the water cleanly without drag-



ACCOMMODATION PLANS OF IDEAL TWO-MAN BOAT

ging, and which, at the same time, has a sufficiently sharp upward rake to prevent slapping and to give it strength. At the same time, it has buoyancy enough when partly submerged to lift the after part of the vessel nicely above a following sea and make her behave well in running free.

After the hull, the most important thing about any sailing vessel is her rig. The ketch rig has been selected in this case on account of its simplicity, moderate area and ease of handling. The sail plan is so arranged that the boat will handle equally well under full sail; jib and mizzen; jib, mizzen and reefed mainsail, or reefed mizzen and storm jib. Under the last-named combination the boat would lie practically hove-to in anything but a hurricane.

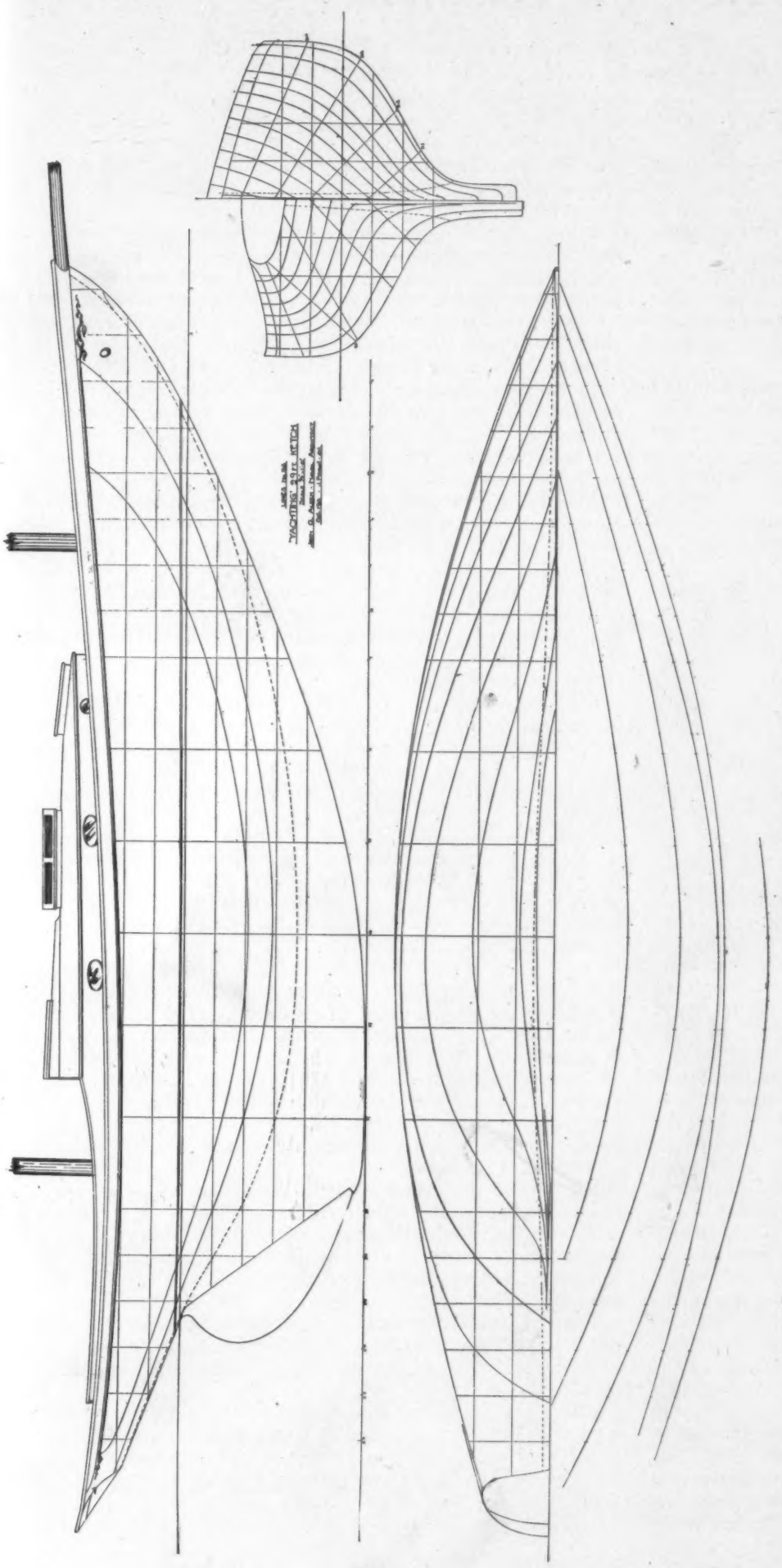
These four combinations of sail allow the greatest possible variation in area with the least labor. The mainsail can be very easily reefed, being all inboard, and it is seldom that one will have occasion to reef the mizzen. When that is necessary, it can be easily accomplished by keeping a reefing earring always rove. Once the clew is bowsed down, the rest is easy. As the mizzen is only 16 feet on the foot, reefing it is not much of a trick, anyhow—nothing like the job which it would be to reef a schooner of the same size with its heaviest sail aft and the main boom sticking 'way outboard.

The great advantage of the ketch over the yawl is that you can douse your mainsail altogether and still have a decent amount of sail left to work ship under, thus doing away entirely with reefing in the many cases where a yawl would not have sail enough to do anything unless you gave her a reefed mainsail in addition to jib and jigger.

The pole-masted rig has been adopted for its simplicity: the topsail is only to be defended in a cruising boat in the case of the sloop rig, where it is easier to clew the topsail than to take a reef in the mainsail. On this boat topsails, with their extra rigging, would only be a nuisance.

One "wrinkle" which we must not overlook is the use of a jib stay in addition to the regulation forestay. This is a feature copied from the Bermuda pilot boats. The jib is set on snap-hooks on the inner stay, so that, if it is necessary to lower away in rough weather, instead of lowering it out on the bowsprit the jib stay is simply slacked away and the jib hauled in on deck, doing away with the necessity of anyone's getting out on the bowsprit, which is the riskiest sort of job on a small boat in rough weather, especially at night. A high percentage of the men lost from the Gloucester bankers have been swept off the bowsprit; hence the popularity of the new knockabout type of fisherman. This separate forestay accomplishes the purpose just as well, however, on a small vessel, without necessitating the long snout of the knockabout type.

An unusually large amount of free deck space is an important feature of this design. No forecastle hatch is shown in the plans, as the arrangement below decks renders it superfluous, and it only serves for someone to stumble over when working forward at night, in addition to cutting out a deck beam and increasing cost. In this case we have plenty of room to handle anchors and chains and the headsail. While speaking of anchors it might be well to call attention to the fact that I have shown hawse pipes in the plans. This is not an affectation, even if the boat is a small one. The trouble with having your chain lead over a chock on the rail or bowsprit is that when the anchor is hove short and the chain straight up and down the latter



LINES OF THE IDEAL 40-FOOT KETCH

forms a right angle where it passes over the chock, and to heave in on it is like pulling a rope yarn over a nail, only worse. I had occasion one breezy morning last summer to get under way in a yawl of about the size of this vessel, but which had no hawse pipes, the chain leading across the cap rail and then over a chock (carrying a sheave) on the bowsprit. The boat was jumping a little, and when the chain had been brought up-and-down the first thing she did was to rip the chock off the bowsprit. The next jump carried away a couple of feet of rail where the chain led across it—and the anchor still held. With the chain leading through the hawse pipe this could not have happened.

Between mainmast and cabin trunk is a large deck space. This gives additional strength to the mast-partners, and will also afford a convenient place in which to carry a coil of hawser, or your anchors, if you are not going to be at sea long enough to warrant the trouble of stowing the ground tackle below decks.

The cabin trunk is narrow and the deck space on either side correspondingly wide—2 feet, approximately, inside of rail. Here is the place to carry your small boat, capsized over the corner of the house with one gunwale just inside the rail of the ship. Lashed securely in this position on the weather side of the vessel, the dinghy will go through about anything which you will care to take on. The rail, by the way, is 7 inches high forward and 5½ inches aft; it will not let a coil of rope slide overboard at once in case it slips off pin.

Aft of the cabin trunk is another portion of the main deck through which the mizzen mast comes up, and which ties the boat together at this point. The cockpit is shallow and self-bailing, with a 40-gallon fuel tank under the deck on the port side and a 60-gallon water tank under the floor.

The cabin house has been made as low as possible, while still giving full 6 feet headroom under the carlins. Below decks the engine is situated under the bridge deck, where it is entirely out of sight, while there is a wide fixed bunk to port, separated from the engine room by a bulkhead. To starboard as you enter is a large toilet room with wash basin, locker for oilers, etc., with an extra clothes locker forward of it. The outer cabin is separated from the inner one by doors, making a good-sized vestibule, which will be found very convenient in sailing in wet weather or at night. The main cabin is of ample size, with a novel chart case to port, consisting of a draw on end which, when let down, can be pulled out and the top used as a table.

The transoms in the main cabin are wide, making excellent beds, and there is ample locker space. The galley is large and roomy, and (what is most important on a small boat) is the full width of the boat, with a seat in front of the ice box for the cook. Two stoves, alcohol and coal, are shown, as both have their advantages. A good-sized pipe berth, lockers, sink with running water, etc., are shown forward. Shelves, racks and lockers enough for all necessities will be found indicated on the plans.

The next boat in this series will be the ideal sea-going two-man power cruiser in the February issue.

The Price of Gasolene

Why the Motor Boat Owner Has to Pay 20 Cents a Gallon, as Explained by the Producer, Refiner, and Retailer. The Prospects for the Future. Relief Possible Through Opening of New Oil Fields, the Use of Other Forms of Fuel, and—Competition

By J. EARL CLAUSON

IN 1911 you paid for the gasolene which made it possible for you to enjoy the pleasures of motor boating twelve cents a gallon. In the year of grace 1912 it cost you twenty. What the price will be next summer nobody at the time of writing has the hardihood to predict.

Gasolene fluctuations present one of the pressing problems of the immediate present. Why should the wholesale price of this fuel have gone up 60 per cent. within little more than a year and its retail price 80 per cent.? More important still, in the face of a probable further rise, is there hope of relief?

It has been estimated that a rise of one cent a gallon in the cost of gasolene means an added daily expenditure by owners of explosion engines in the United States of more than fifteen thousand dollars. On this figuring—which is of necessity only vaguely approximate—a jump from twelve cents to twenty means that motorists are contributing one hundred and twenty thousand dollars a day more to the profits of producers, refiners and middlemen than eighteen months ago. Caught from this viewpoint the outlook is rather staggering.

Clearly to comprehend the situation it is necessary to understand in more than a general way just what gasolene is. Crude petroleum as it comes out of the earth consists of a wide variety of substances, which are separable one from another because each has its own boiling point. Thus it becomes possible, for example, to get out of the crude petroleum the gasolene, which boils at from 70 to 150 degrees of heat, apart from kerosene, which does not begin to boil and vaporize until the latter point is reached.

Having been transformed into vapor by heat, the gasolene is liquefied again by cooling it and put in vessels by itself. It constitutes from 8 to 15 per cent. of the entire bulk of the crude oil from which it has been separated. The kerosene, which follows it in the process of "fractional distillation," as it is called, makes up about 50 per cent. of the whole.

It is obvious to the most stupid that, with the growth of motoring by land, water and air, the demand for gasolene has increased immensely within recent years—not only has, but continues to increase, with no limit yet in sight. Study of the United States Geological Survey's tables reveals, however, that the supply of crude petroleum has increased also. Each year has gone ahead of its predecessor. In 1910 a billion and a quarter gallons more were pumped out of the bowels of the earth than in 1909.

On the face of such returns, even if the increase in output did not keep pace with the increased demand, there would seem to be no sufficient argument for a jump in gasolene's price of 60 per cent. But there is a joker in the pack—several of them, in fact.

One important truth which should never be lost sight of is that not all crude oils yield gasolene. Some yields very little. The richest in gasolene is Pennsylvania crude, which runs as high as 20 per cent. Texas gives less than 3 per cent. of heavyweight gas, Oklahoma about 14 per cent., Illinois about 12, some California crude as high as 12, and some none at all.

It follows that any attempt to estimate the total output of gasolene on a basis of crude petroleum production is futile. It may be comforting in a general way to learn that a billion more gallons of oil have been pumped this year than last, but there is no consolation in it for the owner of a motor boat. Gasolene is what he wants, not crude oil.

Petroleum falls into two classes: fuel oils and refinery oils. It is from the latter we obtain our gasolene. Dr. David T. Day, of the United States Geological Survey, in his report on the production of petroleum for 1911, points out that, while the production of fuel oils was greater than in 1910, that of refinery oils was smaller. Figures thus far available for 1912 are still more discouraging, for they seem to indicate a lower total than that of 1911.

There is yet another source of gasolene supply than current petroleum production. This is refining oil stock on hand in storage warehouses. Time was, before the gasolene thirst reached present dimensions, when the oil companies were able to do better than keep abreast of their business, and what was not needed either to supply the market or keep their plants running was piped into tanks for future reference.

In 1910 there were 126,255,667 barrels of refining oils in the warehouses. In 1911 the reserve had grown by about one million barrels. But at the close of the first six months of 1912, the latest date for which I have been able to find statistics, the reserve had dwindled to 62,900,000 barrels.

This means, according to the oil companies' spokesmen, not more than a six months' supply, bringing production perilously near the margin of demand.

How the use of gasolene has increased from year to year presents an interesting study. Seventeen years ago, in 1895, the market was taking care of fourteen million gallons a year. Gasolene cost more then than it did in the early summer of 1911, when it reached its low point of ten cents a gallon wholesale and from twelve to fifteen cents retail.

Five years later, in 1900, the consumption of gasolene had jumped more than 50 per cent. to twenty-two millions. In the succeeding five years the call was for thirty-one million gallons, and in 1910 a grand total of fifty million gallons was consumed.

Since that year the vogue of the automobile has grown apace. In December, 1910, there were 350,000 explosion engine cars in use; in December, 1911, 550,000; in June, 1912, according to the most reliable figures obtainable, 859,000, including 32,000 trucks. Motor boating has prospered along parallel lines. Both in pleasure and business the gasolene engine is becoming the universal method of propulsion, and the growth of the demand for gasolene is fully accounted for.

If you ask a representative of one of the big oil companies what governs the price of gasolene he will probably reply that it is determined by the price of crude oil. Not the amount produced, mind you—he will emphasize that point—but the price. It is impossible to reconcile the statement that total production and price are not in constant ratio without an understanding of the point I have made above—that refinery oils are the only ones that bear on the gasolene situation, and the usually published figures of total production do not differentiate the raw material into its two great divisions.

Within the twelvemonth up to the first of October, 1912, the price of refinery oils in their crude state had risen about 33⅓ per cent. On this basis, if the proportion held steady all along the line, gasolene which brought ten cents wholesale in 1911 should have been selling for thirteen and one-third cents in October, 1912.

But did it? Unfortunately for the motor boat owner, it did not. Its wholesale price was sixteen cents, a jump of 60 per cent., instead of the 33⅓ which might reasonably have been expected.

There is a big difference between 60 per cent. and 33⅓—to the man who buys his gasolene in small quantities, a difference of about four cents a gallon. Naturally, he becomes interested in knowing why, with the raw material up only a third, the finished product should have jumped nearly two-thirds.

If he insists on pursuing this inquiry, he encounters a book-

keeping tangle which nothing short of a Congressional investigation could straighten. So complicated is the subject that I dare touch the edges of only one or two conditions connected therewith.

As is generally known, before the advent of the explosion engine gasolene was a by-product of the petroleum refining industry. There was no market for it worthy of mention. Some was used for making illuminating gases in house plants, some in cleaning establishments, a little in minor industrial processes.

But the great bulk of it was an offense in the sight of the refiner—something he could neither sell, nor give away, nor dump into the streams without danger of exciting the wrath of local authorities. Nor, on the other hand, could he avoid producing it, since it stood between him and the kerosene oil, of which he could market all he could get.

Such was the state of affairs until the late eighties, when a wonderful transformation scene began. Gasolene, the stone which the builders rejected, began to come into demand. At about the same time the call for kerosene in America and Europe grew fainter.

The latter phenomenon was due to the spreading popularity of gas and electricity for lighting purposes. In the years which have ensued the local kerosene market has dwindled to a shadow of its former self. No city is so insignificant to-day as not to have its electric and gas plants, supplying not only the illumination for its streets, stores and factories, but both illumination and fuel for its homes. Even the kerosene stove has lost its vogue.

To-day the great market for kerosene is in the Far East, where people have just arrived at the oil lamp stage of evolution, and to the Latin-American countries. Kerosene is still used in the United States, to be sure, but in negligible quantities compared with what would have been the case but for its supersession by greater conveniences. And its price does not vary from month to month. You may buy it wholesale at a figure well under ten cents a gallon.

THAT THE PRICE OF GASOLENE IS NOT ALWAYS DEPENDENT ON THE COST OF HANDLING IS EVIDENCED THAT IN OUT-OF-THE-WAY BLOCK ISLAND, WHERE IT IS DELIVERED TO THE BOATMAN IN THIS MANNER, THE PRICE IS NOT APPRECIABLY HIGHER

Meanwhile, the cry for gasolene has kept the refineries working at top speed, with the difference that, while in the old days they were forced to accept more gasolene than they wanted to get at the kerosene, now they have to take the kerosene in quantities far beyond their needs to get the gasolene.

The result is that there is a large surplus stock of kerosene constantly on hand—a growing stock. It necessitates additional tank houses; it entails tieing up of capital. Most important of all, it involves expense.

It is a simple matter in bookkeeping to throw this expense upon gasolene, adjusting its price to carry it. I am not authorized to say that this is done. The ledgers of the oil companies are not open to the casual passer-by. But conceivably it might be done in a readjustment of office system, and the question of propriety would become one for experts to debate. I simply hint at it as possibly helping to explain the upward trend of gasolene.

Beyond kerosene in the fractional distillation process lie the lubricating oils. They, too, are in increased demand in recent years, and their prices are high. The explosion engine's development has boosted for them, as for almost every distillant of crude petroleum except kerosene, not excepting the heavy, non-volatile residuum of raw oil, which in one form may go into the making of roads and in another into laying the dust.

When I pointed out to an oil man that a 33⅓ per cent. jump in refinery oils did not of itself justify a 60 per cent. jump in gasolene prices, he came back at me with two other statements. One was that the ten cent price of 1911 was too low. It was the lowest figure gasolene has touched since it sprang into popularity, and was due, he said, to the competition of the Dutch Shells Company, the great European combination controlled by the Rothschilds.

This concern was sending its surplus to the United States in active competition with the companies which control our home market. There is no tariff on petroleum products. The American oil companies had to meet their foreign rivals, and did so as long as the competition lasted. The inference of the oil man's statement was that they met it at a loss.

When competition was removed the price of gasolene edged higher. America, of course, is not alone in the adoption of the automobile and the motor boat. Europe offers not only a big market for petroleum fuels, but a high-priced one; the petrol which Englishmen feed to their explosion engines brings around thirty cents a gallon, so that at the worst we thus far have an advantage over them. In Venezuela the few who own power boats and automobiles are compelled to pay sixty-five cents a gallon for fuel. In other countries the charge ranges between America's low and Venezuela's high.

The second point the oil man asked me to consider was that the labor cost of production has risen.

At the time of writing—late autumn, 1912—there is a vague feeling in the air that the price of gasolene is to be higher another season instead of lower. One fact pointing to such a conclusion is that the big companies are not making long-term contracts with heavy buyers to supply them at the present figures. They are busy nursing regrets for such contracts made in 1911.

Holding no brief for the oil companies, I have laid before the reader such facts bearing on the rise in price of gasolene as I have been able to obtain. He must judge the situation for himself. Two conclusions are possible. One is that the price of gasolene is fixed arbitrarily by monopolists who control the market completely, barring European competition. The other is that, by reason of changed conditions in the production and refining of oil, the present rate, or a still higher one, is not exorbitant.

To many a motorist on land and water, however, the addition of several cents a gallon to the price of fuel upsets distressingly his calculations as to the cost of his sport. He wants to know whether there is any chance of relief.

Theoretically, there are three. One is that fresh oil fields producing petroleum from which gasolene may be distilled will be found. Another, still more remote, is that gasolene will be made synthetically, as rubber, a much more complex commodity.

The third chance of relief is the invention of a carburetor suitable for boat and automobile engines which will vaporize kerosene. It is along this line that the oil men themselves look for relief to come and a market for their surplus kerosene.

Inventors have already improved their carburetors to take care of gasolene of much lower specific gravity than they were originally designed for. There are already a number of successful kerosene engines on the market, and also some attachments for heating and vaporizing kerosene for use in engines designed primarily for gasolene; but, as a rule, these find greatest favor among boats used for commercial purposes.

The Annual Meeting of the A. P. B. A.

Supervision and Control of All Records and Titles to be Undertaken by the Association. The Change From Advisory to a Controlling Body Unanimously Adopted. New Status of Great Importance to the Clubs of the Association and Motor Boat Racing Generally

The changes adopted at the annual meeting of the A. P. B. A. should have a beneficial and far-reaching effect on motor boat racing in this country, and should be studied carefully by every one interested in the better development of the sport.—Editor.

ONE of the most important meetings ever held by the American Power Boat Association, and one which promises to be far-reaching in its effect, was that of November 26 last in New York City. This was the annual meeting, and over 70 delegates were present, representing between 65 and 70 of the 133 clubs comprising the Association.

Several fundamental changes in the constitution were taken up, the most important being those of making the Association a controlling body instead of a purely advisory one, and the appointment of a racing commission, to have supervision of all races in which a record is striven for, or where titles other than local ones are to be awarded.

In regard to the latter, the American Power Boat Association had written to all the other power boat associations in the country asking their co-operation in order to bring about a better and more decent state of affairs in power boat racing than has prevailed in the last few years. That the need of such supervision is great, everyone who has followed the racing game in this country will admit; and while letters were received from several of the associations sympathizing with the proposed action of the A. P. B. A., and promising to put the matter before their members at the next meeting of their respective bodies, the A. P. B. A. felt the necessity of taking some action in the matter themselves, so that at least a start might be made in the righ direction, as far as the clubs composing this Association went. It might be noted, in passing, that the motion appointing such a supervisory commission, and also the one of changing the scope of the Association, were passed without a dissenting voice.

SYNOPSIS OF BUSINESS—ANNUAL MEETING OF A. P. B. A. HELD IN NEW YORK CITY, NOVEMBER 26, 1912

RACING REFORMS ADOPTED—OFFICIAL COURSES

A racing commission of three members has been created, which shall supervise all special races where National or district titles are involved. It shall assume such supervision in conjunction with the race committee of the clubs or sections running races under the special sanction of the Association where a permanent record is sought. These special sanctioned races must be conducted in a manner to secure accurate results; and these can only be secured for record if the courses over which they are run and the timing are verified by our own officials. To insure accurate courses an official civil engineer of the Association will verify existing courses or lay out new official courses at the request of any three local clubs, or of a section of the Association. These courses will then be known as official courses of the A. P. B. A. All applications must be made to the secretary of the racing commission for official courses. The members of this commission may be chosen from the membership of the council or from the list of delegates of clubs in good standing.

The personnel of the racing commission is as follows: Allen K. White, chairman, Atlantic City, N. J.; Reuben B. Clark, secretary, 701 North American Building, Philadelphia; Frederick K. Lord, 105 Lord avenue, Bayonne, N. J.

OFFICIAL TIMING FOR RECORDS

An official timer, also provided by the racing commission, will act in conjunction with the race officials holding sanctioned races, where National or district titles are involved. He shall verify the timing and countersign all records obtained in these sanctioned races, and shall report to the racing committee of the Association the result of these races for official tabulation and recording in the year-book of the American Power Boat Association. All applications must be made to the secretary of the racing commission for official timers.

OFFICIAL TITLES FOR RACES

An official title for National or district races will be issued by the racing commission. This is absolutely necessary to prevent senseless duplication or unwarranted and extravagant claims for high sounding and obviously incorrect assumption of titles. There shall be but one United States championship title and but one Atlantic, Pacific, Great Lake, etc., championship title. The advisability of adopting this course is self-evident after reviewing the flagrant contradictions and unwarranted claims for titles offered in the past.

OFFICIAL RECORD CERTIFICATES

Official record certificates will be issued by the A. P. B. A. to owners of boats racing in sanctioned races, only where all the requirements have been conformed to. One certificate, properly engrossed and signed by the president and secretary, will be issued to the owner or owners of such boat, and one certificate likewise to the club or section he or they represented in the race. These official records will be printed in the year book of the American Power Boat Association, which will hereafter be printed and circulated early in January of each year.

RESTRICTED CLASSES FOR RACING

A special committee has been appointed by the president to revise the schedules for restricted boats for racing. It is desired to develop this safe and sane class of boats for general racing. The tendency towards this class is certain, now that the speed craze has demonstrated that it can develop only through freak racing machines, which through a stretch of the imagination alone can be classed as a boat.

THE AMATEUR IN RACING

Racing boats must be steered hereafter by an amateur member of a club in all A. P. B. A. sanctioned races. The Association has defined an amateur in power boating as one who participates for sport as distinct from gain; one who acquires nautical experience through the love of the sport, rather than through necessity or the hope of gain. No person who follows the sea as a means of livelihood, or who has accepted remuneration for services in handling or serving on a yacht or power boat, or who races for cash prizes, after 1912, shall be considered an amateur.

The action which the American Power Boat Association has now taken enables it to operate on advanced but clearly defined lines. It has assumed the responsibilities involved by the change made from a purely advisory to a controlling basis. It means to lead in the necessary reforms so urgently needed and will continue on this course irrespective of any and all considerations. The Association has but one object in view, and that object is the upbuilding and sustaining of clean and honest methods in the sport of motor boating.

H. T. KOERNER, President.
M. M. WHITAKER, Secretary.

It should be borne in mind that this action of the A. P. B. A. is at present only binding on the clubs which form the Association. It is not intended to infringe on the prerogatives of any other association; but the crying need of a step in this direction is plainly apparent, and it would be the best thing for the sport if the other associations would follow the lead of the A. P. B. A., to the end that all such power boat associations could send delegates to a national commission, which would thus control power boat racing and conserve the interests of power boat men throughout the United States and be really national in its scope. Such a commission is bound to come sooner or later, and the sooner it is put into effect and started on a working basis the better it will be for the sport.

The chaos that has resulted from the numerous associations working at cross purposes, none of them with any control over even the clubs forming them, has had a distinctly bad effect upon the sport, as is seen by the senseless duplication of championship titles and by records that are claimed but cannot be substantiated, and which are permanently recorded nowhere but in the magazines and in the newspapers. The action of the A. P. B. A. is commended to the clubs, officers and members of like associations in the United States.

If these other Associations do not take some such step to broaden their scope and power, and a definite stand on this question, or fail to "get together" to properly organize the sport, they will have lost a great opportunity to make themselves really a factor in power boat affairs and, also, to justify their existence—for what lasting qualities has an Association that has no powers other than to "recommend?"

From Nassau to New York in an Auxiliary Catboat

Part II. From Palm Beach to Mayport, at the Mouth of the St. John's River. Running Mosquito Inlet Bar in a Heavy Sea

By ALFRED JOHNSON

AFTER leaving New River Inlet, some 30 miles north of Miami, and passing Palm Beach, on Lake Worth, we enjoyed a wonderful sail up the lower reaches of that beautiful tropical body of water, the Indian River, Charlie and I taking turns steering and looking out forward to give directions, so as to avoid snags and sandbars.

At times this stream is wide as a lake, at others it narrows up to a canal, and at night the lights from the cabin port-holes shining out on the trees that almost meet overhead, dance along with us, companions in our course, but projected a little in advance, like will-o'-the-wisps.

How the wind did howl through the palm tops way above us, though sheltered where we were on deck, down under the high banks, it was nearly calm, in spite of the northerly gale still raging, and which had forced us to come in over the Bar at Little River Inlet and to continue by this inside passage instead of proceeding northward on the open ocean in the Gulf Stream, as we had been doing!

As night drew on we approached a little wooden bridge with a red light in an old-fashioned square-sided glass lantern suspended from a rustic truss girder in the center to mark the channel and draw. The air suddenly became perfumed with the scent of orange blossoms from the groves on the outskirts of the little village of Boynton, and at about 8:30 I called to Charlie that this day's work was over and scrambled aft over the cabin top to stop the engine and run the bow of the boat into the soft ooze of the bank, up among the curious centipede, or, better still, Eifel-Tower-like roots of the mango bushes that grew right out of the water.

Charlie, always true to his deep-sea instincts, soon appeared with the anchor light in his hand, and, climbing forward, hung it on the mast rising from where the bow was buried in the surrounding branches. Then, coming aft to the cockpit, he viewed it for a full minute pensively, his clear, blue eyes sparkling, and then, with a burst of Northland sentiment, remarked, half sheepishly, "It's just like a Christmas tree in Sweden, all lit up like."

I looked over my shoulder and realized for the first time that the waning moon had been silently coming up out of the tree tops over it all through rifts in the black clouds.

It presaged well for the next day, and, contented thereat, I quickly rolled into one of the Myrtle's broad, luxurious transoms and was soon wafted into the sound sleep of the physically tired and mentally content by a cool, orange-blossom-scented breeze that came in through the open companionway, skylight and portholes. If I dimly heard gentle rumbling noises, they were either the lulling boom of the distant surf pounding on the back side of the sand dune that separated our waterway from the ocean to the eastward, or else the rumble of the East Coast train, about as far off to the west, as it bore its sleeping load of pampered pleasure-seekers from Palm Beach and the other Southern resorts away northward.

These inside passages by canal, river, sound, bay and lagoon, though very interesting from a scenic point of view, are not a joy to the navigator used to blue water, especially in a boat with a comparatively small auxiliary engine and drawing from 3½ to 4 feet of water. For a full-powered, shoal-draft launch, drawing from 2½ to 3 feet, they would doubtless be a delight, if a man could traverse them leisurely.

I began by keeping account of the times we stuck in the mud or on sandbars, but after the first day gave it up, for we would, in some shallow stretches, run on several times in an hour, and not infrequently, on other occasions, it would take us from one to three hours to get off again. In some places there simply was not water enough to float us from one lagoon to another, and we literally had to haul the boat over, inch by inch, with a kedge anchor out ahead, or with tackles run to the trees on the bank.

We became expert at getting the boat off after a week's practice and could tell by looking the situation over, and after sounding around her with a 10-foot pole to determine in which direction deep water lay, just which method would best suit the particular case.

In some instances the engine, reversed, would gradually work her off, and we could sit down and look on at our ease while the rush of water from the propeller scoured the sand from under her bilges; in others, it would force her head over a lump, and again we could help by getting up the sail and listing her over; in fact, we often found in various tight places on the trip that a combination of sail and power was mighty handy, often falling back on the one when we couldn't use the other. Pushing with long poles was helpful at times, but most often the "old reliable" and only sure method was to run the cable out, backed by the big anchor or made fast to a tree trunk, and then to tug and haul by main strength with a tackle. The Myrtle, being small and cat-rigged, with no room to work forward of the mast, had no winch or windlass, so our arms and backs had to take their places. If the stern were caught, we could help her to lift it by getting the tender on the bow and filling it with water, and once we had to pile the "pig" ballast all up in "the eyes of her," while one of us crawled in on top of it and got forward against the mast and the other stood watch on deck, waiting for the full range of the flood tide, which here consisted of but a few inches, to lift her out of the sandbar, on which she had gone hard and fast under full sail and power.

THE WAY WE CARRIED OUR TENDER OVER ONE SIDE OF THE COCKPIT

A day or two before we reached Ponce Park, the pretty little Florida village at Mosquito Inlet, our stuffing-box had loosened up and developed a serious leak. After a council of war, Charlie and I laid Myrtle out at high tide, her stem upon the sand beach of the Government Lighthouse Reservation, and we went to work to fix her up ourselves when the next tide left her stern and propeller high and dry.

We really didn't have fit tools to do the work with, and I scoured the town for a big wrench with an opening large enough to fit over our lock-nut. The only one in the place turned out to be the private property of one of the light-keepers, an enterprising, ingenious fellow, who, I learned incidentally, did a not inconsiderable business in repairing

engines, tightening up stuffing-boxes, etc., for local and passing boats through the winter months, getting from $5 to $10 per, according to the owner's general appearance, verdancy, or gratitude.

"Getting next" to this worthy with the aid of a couple of Havana cigars I had brought along for just such occasions and an hour's conversation, he sent his Stilson over by one of his boys, and we got the job done between tides and the Myrtle afloat once more.

He also gave us some information on Southern inlet bars in general and some advice on crossing this particular one that was very valuable to us when we went to sea a little later.

CROSSING MOSQUITO INLET BAR

It seems worth while, for the benefit of other amateurs, to describe in detail our coming out over Mosquito Inlet Bar. This we accomplished against the express warning of the local pilot, at a time when the sea was running high, the tide only half in and the buoys still out of position, it having been too rough for the "health-seeking" gentleman from Nantucket whose duty it is to tend them for Uncle Sam after every storm to get out in his power-dory to replace them.

The thrilling experience of crossing this bar, after cautiously buffeting our way under power alone through the S-shaped channel that meandered through these two miles of broken water, leaping and tumbling like a succession of waterfalls, whose 10-foot-high crests were at times not 50 feet away from us, afforded me, perhaps, one of the most intensely exciting three-quarters of an hour of my whole yachting life. Incidentally, too, it provided a sensational morning for the "winter resorters" from the little hotel who had gathered on the splendid beach which leads from here to Sea Breeze and Ormond, and for those also in the top of the tall lighthouse—likewise eager to watch us go out, or rather, as they predicted, to see us brought back by the life-savers.

It was on this very bar that a little oil steamer broke up awhile ago, and of it the United States Coast Pilot says:

"The entrance, which is about one-half mile wide, is obstructed by shifting shoals which extend about ¾ mile seaward and form a bar, over which the channel ranges from 5 to 7 feet. Vessels of about 7 feet draught can enter the Inlet at high water and with a smooth sea, but the services of a pilot are necessary for any stranger, as the channel changes frequently. Pilots will come out to a vessel making the pilot signal outside the bar."

It was my first experience at trying to run out over a really bad Southern bar, but I did not have to do much analyzing of my sensations to determine just what it was like, for I had been bounced through the same motions before, though never all at the same time—i. e., for about twenty minutes it was like a continuous performance at both shooting the chutes and driving a sleigh over a succession of closely placed "thank-you-mam's" in a well-worn New England country road after the January thaw.

Charlie's arms were locked around the bare pole mast as he presumably "stood" on watch forward. But, as a matter of fact, there was not much standing about it, and I could catch glimpses of his bare feet and legs and rolled-up trousers swinging out over the seething water as Myrtle would shoot down diagonally on one bow, and then, after making a half circle, they would dangle out equally far in the opposite direction as she made an oblique dive the other way. I was braced astride of the wheel, gripping a spoke firmly in each palm. Profiting by the experience of New River Inlet bar, we had closed the companionway hatch and every port-hole in the boat up tight; this time, however, she took the waves, for the most part, bow-on, and beyond flying and blinding spray, which encrusted itself on my face only to be washed off in time by another succession of lukewarm douches, she did not throw water alarmingly.

So strong were the fresh head wind and swiftly-running head tide that we were, I should say, fully 20 minutes buffeting our way

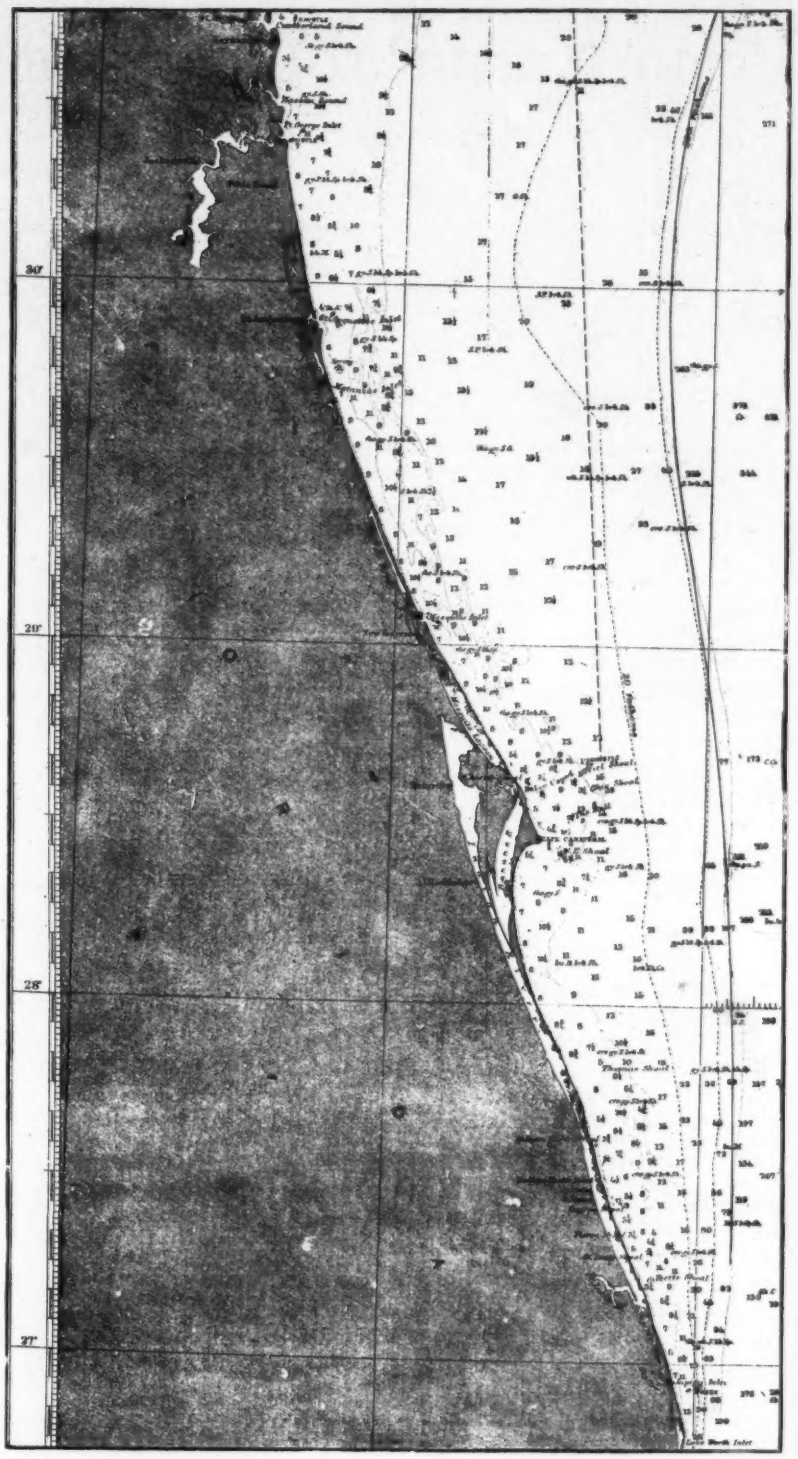


CHART OF THE FLORIDA EAST COAST FROM LAKE WORTH INLET TO THE MOUTH OF THE ST. JOHN'S RIVER

through the one-half to three-quarters of a mile of broken water. At last we reached a comparatively smooth lee, back of the inner sandbar, which at this stage of the tide was covered by about two feet of water and across which the waves were fairly hissing as they tumbled and churned and swirled in their chasing flight all the way from Morocco across the Western Ocean to Florida.

Here was "the parting of the ways" for us, and I was fully conscious at the time of making as well considered and carefully chosen a decision as I was ever forced to make afloat, or perhaps anywhere else; and upon its correctness and consequent results I actually felt that my life depended.

When we had run the Myrtle in over New River Inlet Bar the week before, there had been no room for choice, no alternative. To stay outside in her meant shipwreck and all its consequences;

in fact, we had been literally driven in like a couple of whipped curs. To get in at all had required all our energies and the help of the life-saver who came out as far as he dared in his power-dory. This time circumstances were reversed; we were now going forth deliberately from a perfectly safe haven of our own free will.

As I have said, this was the first time I had ever attempted to run out over one of these treacherous Southern bars in action, and the specific problem it now presented to me was the proper choice of two channels. For the past twenty minutes or so our course had been a little to the north of east, which had brought both the current and wind slightly on our starboard bow. These two combined had been constantly driving us off to leeward. But by keeping her up more than the course called for, I had succeeded in offsetting the leeway and in holding her to the deepest water, down the middle of the channel. Now, by continuing this course longer, I should bring the boat into destruction on the shoal sandbar that crossed our path like a wall. It suddenly forced itself upon my attention that, at the rate we were going, we would hit that wall in about three minutes!

Two possible alternatives—i. e., two passages of escape, and two only—were now open to us, unless, of course, we showed the white feather to the people ashore, and, turning tail, ran back into the harbor, whence we had worked our way out so laboriously. "Swim first," I muttered through my salty lips.

The first of these passages led out to sea through the regular and wider channel, but to enter this meant steering slightly to the south of east, and directly into the teeth of the wind, against the rushing current and huge, tumbling waves. Was there power enough, I asked myself, in the little 14 horsepower, two-cycle engine, already showing signs of being impaired from the necessity of shutting off its air by closing the cockpit hatches against the flying spray, which would have put it out of commission with one drenching? In fact, water from the cockpit floor had run down the iron rod connecting with the throttle and already stopped the engine once on the way out, owing to the lack of imagination on the part of the installer of the engine, who had brought the rod through the cockpit floor instead of higher up through the coaming of the hatch.

The only way to decide was to try, so I pointed her bow deliberately in to it, watching anxiously a range I had picked out on the graceful, cone-shaped, red brick tower of the Mosquito Inlet lighthouse that rises abruptly out of the greenery that clusters about its three neat red-brick keeper's houses. With acrobatic turns of the wheel I held her head up and made her look at it for perhaps two long-drawn-out minutes, squinting through my salt-encrusted eyelids as best I could all the while at my lighthouse range. There was no room for doubt; I decided without a question that she could never stem it. In fact, she was even now, before getting into the real thick of it, simply plunging up and down and going stern-first back toward the beach. Already Charlie, noticing it, had turned the stony gaze of his fixed blue

THE FOLIAGE OF THE LOWER COAST OF FLORIDA IS INTENSELY TROPICAL

THE HEAVILY WOODED BANKS OF THE FLORIDA RIVERS AND SOUNDS

eyes and the rakish little bowl of his ever-faithful pipe at me with pathetic inquiry and surprise.

To leeward of us, and leading in a general northeasterly direction, was the Swash channel, running along back of the line of waves that were breaking and tumbling over the outer bar. The tide was, as I have said, about half up, and by all accounts we should not be entitled to water deep enough to allow us to float over this, the shallower of the two bars, for at least an hour.

I gazed at it, however, as a drowning man might at a straw or a rope-end. On both sides of its quarter-mile or so of length the water was roily from being loaded with the red and brown sand constantly churned up and stirred round and round and over and over by the rotary swirl of the waves, as their under edges were retarded and tripped by the friction with the bottom and their crests tumbled on headlong and were hurled end over end in their mad, wild, tearing career.

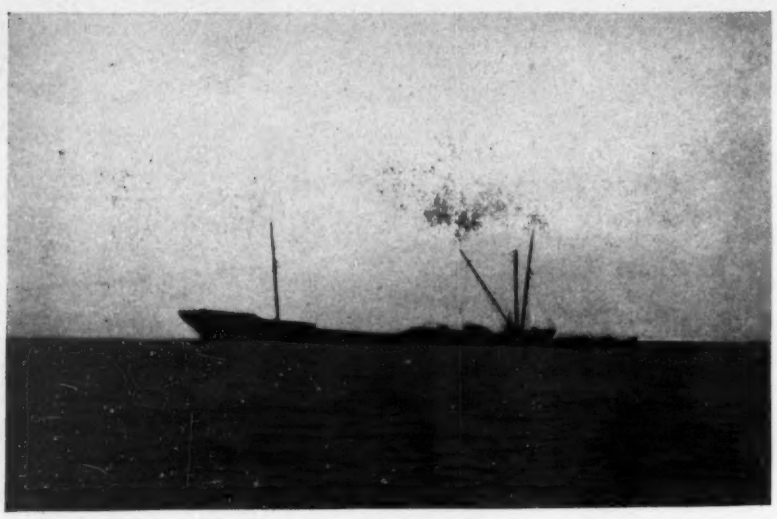
I looked at this Swash channel through half-closed eyes between the duckings. Even so viewed, the water over its bar looked good to me, cleaner and less disturbed and turbid, and its course straighter, in fact, than the main channel itself.

Owing to some seemingly capricious freak of nature, the recent storm had favored the Swash channel and scoured her out so that temporarily she was in the ascendency, broader, straighter and less shallow than the old main channel itself.

By letting Myrtle's head pay off until she would point out through the Swash channel, we would have a leading wind from one end of it to the other. Then the force of this fresh breeze on the boat's high sides, stern and thick 40-foot mast might give just help enough when with us and not against us to enable us to stem the incoming tide.

I didn't hesitate a moment. My course of action was clear to me. Spinning the wheel up, I swung her off smartly, just clear of the innermost southern end of the outer northern sandbar, and then held her up as snug as I could to the inner side of this bar, in order to be sure to make good the course; and thus I let her go out through the Swash channel, the fresh breeze on her quarter turning the tables enough in her favor to help her out against the tide. How the waves, now abeam, did leap and swash against our high white sides, as Myrtle rolled and settled into their foaming midst! At times they fairly leaped over us, as if in playful sport, and one impact would follow another as quickly as if shot from a gattling gun.

And sideways, too, we were being pushed by the waves, a little at every plunge; there could be no doubt about that in my mind, as I took a second squinting range through the flying spray at the tall lighthouse tower. The problem had changed again, and had now resolved into the following: Would the line resulting from the parallelogram of forces, fanned by the current and waves on the one hand, and the slip and pitch of the propeller on the other, carry us by the northern end of the second and inner bar, or would



"WE PASSED THE WRECK OF THE GERMAN STEAMSHIP ZUBURG OFF THE END OF THE SOUTH JETTY AT THE ENTRANCE TO THE ST. JOHN'S RIVER"

the seas force us sideways onto the hard, banking sand of this inner bar, only to be rolled over and crushed in their final rough embrace?

This latter surely would have happened soon had Myrtle been equipped with power alone; but here, as on many other occasions during our long voyage, the sail was used to supplement the engine, with the result that, together, they were more than a match for the elements.

Convinced of the serious consequences if the boat were allowed to continue to fall off sideways with the slap from each wave, I left the wheel alone for a few seconds, dashed to the centerboard trunk, and measuring, with two rapid spans of my fingers, 16 inches, I dropped the board down about a foot and a half—all I dared to give her in this shallow water, lest it strike and become twisted, which might make the boat unmanageable and "land us" for good and all.

Then leaping back to the wheel to straighten her on her course, from which, momentarily left to herself, she had already fallen off, I whipped out my sheath-knife from the belt I always carried and slashed the lashings that held the end of the gaff securely to the boom, which was, in its turn, tied down into the crotch and held firmly, with the main sheet swayed taut, to prevent its taking charge of the deck in the rolling and slatting while crossing the bar. Next, I howled at Charlie and motioned him to pull on the peak halyards which lead down the mast through his very fingers before coming aft to the cleat on the cockpit abaft of the house, to which I jumped to hold the turn, take in slack and make fast when he should have hoisted enough of the peak.

Sailor by instinct that Charlie was, he had seen and understood my movements at once, though, as he told me later, with the noise of the engine, the roar of the waves and whistling of the wind, he couldn't hear a word I said. It did not require a full minute for us to get a good-sized piece of the peak onto her. I made no attempt to uncrotch the boom, but simply left it secured, a conveniently placed lashing holding the clew of the sail in place of a sheet.

At once the effect of this new impelling force was apparent upon Myrtle. Given new life and energy by the strength of the half gale blowing freely and squarely into the generous bellying bunt of the peak, and steadied by the piece of the centerboard, she gathered herself up and started off.

I relaxed a bit my grip on the spokes of the wheel and let my fingers play over them as I turned it just enough to meet her yawings and steadied her. Charlie unwedged the T. D. pipe from his face and waved it over his head, all but falling overboard as he let go his hold of the mast to do so. Soon we were clear of the seething, roily sand points and scudding into comparatively quiet, deep and clear water. Next, rounding-to and throttling down the engine, we hauled the tender aboard. So far we had been towing it astern, as a precaution in case we should have to leave Myrtle on the bar. We didn't expect the tender would live and ride upright long, but at least it would serve as a sort of life-raft to which two active men could cling during those moments of suspense while the people from the Light Station might be trying to get out to us in their big power boat.

A striking illustration of the abnormal strength that is given to men under the stress of unusual excitement was now afforded us by the way in which we two men handled that 11-foot tender, half full of sandy water, over the high side, and flopped her, bottom up, over the cockpit, in that heavy, rolling sea, without the use of tackle of any kind, and with only our bare hands.

Next, we put two reefs into the mainsail, and, giving the wheel to Charlie as soon as we were under way, I dove into the cabin for my log book and recorded on the spot what we had just been through before I should have forgotten one of its details. When we were finally snugged down and squared away it was about 3 p. m., and then we started on what proved to be one of the best sails of our entire run. Up the beach we flew. This beach is, perhaps, the most famous in the world for automobile racing, and on it four years ago that very month many of the world's records were broken.

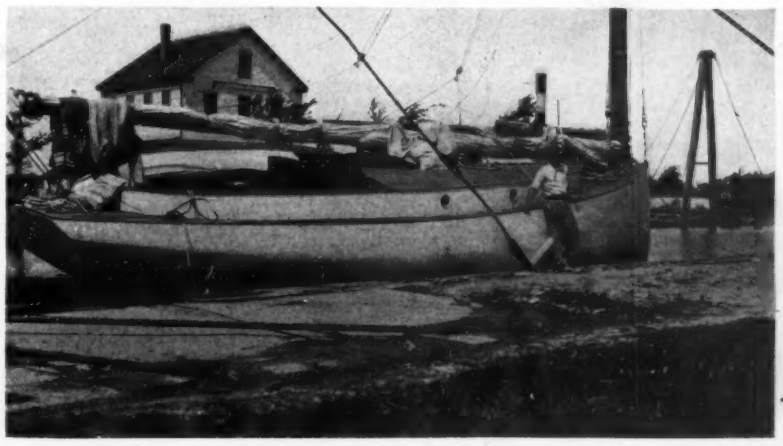
The first prominent, artificial landmark we made was the new hotel at Sea Breeze, with its tall, tower-like roof ends. It had been built since my last visit, and is said to be first-class. It has a very citified appearance from the water, and suggested some of the Atlantic City hotels. From this landmark we slipped swiftly up the beach, having already passed the monument which marks the spot where, some half-dozen years ago, a New England coaster and all hands were lost. All through the night we flew before the following gale, until, after picking up the powerful occulating gas-buoy at St. John's Bar, whose sudden flashes, by the way, we saw before we did the fixed white light at the entrance to the St. John's River, 77 feet high, and supposed to be visible fourteen and one-half miles at sea.

We arrived just after daylight at Mayport, one hundred-odd miles north of Mosquito Inlet Bar. I had turned in at 2 a. m. for a cat nap. A little later Charlie called me to look at a light he had made out in the east through the haze. He wasn't sure whether it was a lighthouse or a vessel. I took a squint at it through sleep-laden eyes and recognized the last quarter of the waning moon just rising above the horizon.

In all this remarkable run not a craft except our own did we see until we met the great sand-sucker which keeps the channel clear coming out over St. John's Bar to dump her early matinal cargo of dredged material. She plunged into the old swell heaving in from seaward until her forward deck was nearly awash, so heavily was she loaded, while Myrtle mounted the rollers as they approached and rode them like a duck.

Just inside of the jetties we passed a gang of men about to set off a charge of dynamite to break up the wreck of the German

(Continued on page 58.)



MYRTLE PASSING THROUGH ONE OF THE NUMEROUS LOCKS OF THE TRIP

Sailing With Henry Hudson

Continuation of the Third Voyage From Cape Cod to Cape Hatteras, and up the Coast to the Hudson River

PART II

This account of Henry Hudson's third and fourth voyages to the coast of North America, on the quest for the Northwest Passage, is told in the famous navigator's own words, or in those of his mate, Robert Juet, as contained in the log of those two voyages. The present voyage was the third that he made, and was the one on which he discovered the Hudson River.

In a previous instalment we have followed the ship across the Atlantic to the Banks of Newfoundland, to Nova Scotia, and to the mouth of the Penobscot River, where a stop was made to replace a foremast which had been carried away. The voyage was then continued southward to Cape Cod, the Half Moon, in the last chapter, being left at anchor on August 3 near Race Point.

This account is from the log, which was kept by the mate of the Half Moon, and in reproducing it the phraseology and spelling of the original manuscript have been retained. Some editorial notes will be found in the text as an aid to identifying the various landfalls which the Half Moon made.—EDITOR.

THE fourth was very hot: we stood to the Northwest two watches, and one South in for the Land, and came to an Anchor at the Norther end of the Headland, and heard the voyce of men call. Then we sent our Boat on shoare, thinking they had been some Christians left on the Land: but wee found them to bee Savages, which seemed very glad of our comming. So wee brought one aboord with us and gave him meate, and he did eate and drinke with us. Our Master gave him three or foure glasse Buttons, and sent him on Land with our shallop againe. And at our Boats comming from the shoare he leapt and danced, and held up his hands, and pointed us to a river on the other side; for we had made signs that we came to fish there. The bodie of the Headland lyeth in 41 degrees 45 minutes. We set sayle againe after dinner, thinking to have got to the Westward of this Headland, but could not; so we beare up to the Southward of it, and made South-east way; and the Souther point did beare West at eight of the clocke at night. Our soundings about the Easter and Norther part of this Headland, a league from the shoare are these: at the Easterside thirtie, twentie seven, twentie foure, twentie five, twentie. The North-east point 17 and then 18 fathoms, and so deeper. The North-end of this Headland, hard by the shoare thirtie fathomes; and three leagues off North North-west, one hundred fathomes. At the South-east part a league off, fifteene, sixteene and seventeene fathomes. The people have greene Tobacco, and pipes of red Copper. The Land is very sweet.

This headland that he speaks of is evidently the outside of Cape Cod, on which they cruised from the northern end, Race Point, to the southern end, Monomoy, encountering the strong tides off Pollock Rip and along the back side of the Cape. They probably could not get to the westward on account of the shoals south of Monomoy.

The fift (August), all mystie. At eight of the clocke in the morning, wee tact about to the Westward, and stood in till foure of the clocke in the after-noone; at which time it cleered, and wee had a sight of the Head-land againe five leagues from us. The Souther point of it did beare West off us: and we sounded many times, and had no ground. And at foure of the clocke we cast about, and at our staying wee had seventie fathomes. Wee steered away South and South by East all night, and could get no ground at seventie and eightie fathomes. For wee feared a great Riffe (tide rip) that lyeth off the Land, and steered away South and by East.

The sixth, faire weather, but many times mysting. Wee steered away South South-east, till eight of the clocke in the morning; Then it cleered a little, and wee cast about to the Westward. Then we sounded and had thirtie fathomes, grosse sand, and were come to the Riffe. (Nantucket Shoals evidently had acquired their reputation even in Hudson's time.) Then wee kept our Lead (going), and had quicke shoalding, from thirtie, twentie nine, twentie seven, twentie foure, twentie two, twentie and an halfe, twentie, nineteene, eighteene, seventeene; and so deeping againe as proportionally as it shoalded. For we steered South and South-east till we came to twentie sixe fathomes. Then we steered South-west, for so the tyde doth set. By and By it being calme we tryed by our Lead (hove-to to sound); for you shall have sixteene or seventeene fathomes, and the next cast but seven or six fathomes. And farther to the Westward you shall have foure and five foot water, and see Rockes under you, and you shall see the Land in the top. Upon this Riffe we had an observation, and found that it lyeth in 40 degrees 10 minutes. (Probably Nantucket South Shoals, though his observation was some 40′ out.) And this is that Headland which Captaine Bartholomew Gosnold discovered in the yeere 1602, and called Cape Cod; because of the store of Cod-fish that hee found thereabout. So we steered South-west three leagues, and had twentie, and twentie foure fathomes. Then we steered West two Glasses halfe a league, and came to fifteene fathomes. Then we steered off Southeast foure Glasses, but could not get deepe water; for there the tyde of ebbe laid us on; and the streame did hurle so, that it laid us so neere the breach of a shoald, that wee were forced to Anchor. So at seven of the clocke at night, wee were at an Anchor in tenne fathomes: And I give God most heartie thankes, the least water wee had was seven fathomes and an halfe. We rode still all night, and at a still water I sounded so farre around about our ship as we could see a light; and had no lesse than eight, nine, ten, and eleven fathomes: The myst continued being very thicke.

This is rather confusing if we suppose, as some commentators hold, that Hudson rounded Monomoy Point and stood West across Nantucket Sound. More likely he went out around the South Shoals—as, indeed, his latitude of 40° 10′ N. on the south end of the "Riff" would indicate. In this case, being well off shore most of the time, it is easy to understand how he might have taken Nantucket Island as the southern extremity of Cape Cod. Assuming this to be the case, his description fits the locality exactly: after attempting in vain to round Cape Cod to the north-ard he stood south along the beach until in the vicinity of Pollock Rip Shoals, when he ran off S. E. for deeper water, sighted Nantucket from the east and finally rounded the South Shoals to the west.

The seventh, faire weather and hot, but mystie. We rode still, hoping it would cleere, but on the floud it fell calme and thicke. So we rode still all day and all night. The floud commeth from the South-west, and riseth not above one fathome and an halfe in nepe streames. Toward night it cleered, and I went with our shallop and sounded, and found no lesse water than eight fathomes to the South-east off us; but we saw to the North-west off us great Breaches.

The eight, faire and cleere weather. In the morning, by sixe of the clocke at slake water wee weighted; the wind at North-east, and set our fore-sayle and mayne top-sayle, and got a mile over the Flats. Then the tyde of ebbe came, so we anchored againe till the floud came. Then wee set sayle againe, and by the great mercie of God, wee got cleere off them by one of the clocke this afternoone. And wee had sight of the Land from the West North-west, to the North North-west. So we steered away South South-east all night; and had ground untill the middle of the third watch. Then we had fortie five fathomes, white sand and little stones. So all our soundings are twentie, twentie two, twentie seven, thirtie two, fortie three, fortie three, fôrty five. Then no ground in seventie fathomes.

The ninth, very faire and hot weather, the wind a very stiffe gale. In the morning, at foure of the clocke, our shallop came

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REPRODUCTION OF THE HALF MOON WORKING OUT OF HARBOR

running up against our sterne, and split in all her stemme; So we were faine to cut her away. Then we tooke in our mayne sayle, and lay atrie (hove-to) under our fore-sayle until twelve of the clocke at mid-day. Then the wind ceased to a faire gale, so wee stood away South-west. Then we lay close by, on many courses a South by West way fifteene leagues; and three watches South-east by East ten leagues. At eight of the clocke at night wee tooke in our top-sayles and went with a low sayle; because we were in an unknowne sea. At noone we observed and found our heighth to be 38 degrees 39 minutes. (They stand west with light, variable airs.)

The seventeenth, faire and cleere Sun-shining weather, the winde at South by West; wee steered to the Northward till foure of the clocke in the morning; then wee came to eighteene fathomes. So we Anchored untill the Sunne arose to looke abroad for Land, for wee judged there could not but be Land neere us, but we could see none. Then we weighed and stood to the Westward till noone. And at eleven of the clocke wee had sight of a low Land, with a white sandie shoare. By twelve of the Clocke we were come into five fathoms, and Anchored; and the Land was foure leagues from us, and wee had sight of it from the West, to the North-west by North. Our height was 37 degrees 26 minutes. Then the wind blew so stiffe a gale, and such a Sea went that we could not weigh; so we rode there all night an hard rode. (Riding out a gale at anchor on the Eastern Shore of Virginia?)

The eighteenth, in the morning faire weather, and little winde at North North-east and North-east. At foure of the clocke in the morning, we weighed and stood into the shoare to see the deeping or shoalding of it, and finding it too deepe, wee stood in to get a rode; for wee saw as it were three Ilands. So wee turned to windward to get into a Bay, as it shewed to us the westward of an Iland. For the three Ilands did beare north off us. But toward noone the wind blew Northerly, with gusts of wind and rayne. So wee stood off into the Sea againe all night; and running off we found a Channell, wherein we had no lesse than eight, nine, ten, eleven and twelve fathomes water. For in comming over the Barre, wee had five, and foure fathomes and a halfe, and it lyeth five leagues from the shoare, and it is the Barre of Virginia. At the North end of it, it is ten leagues broad, and South and North, but deepe water from ninetie fathoms to five, and foure and a halfe. The Land lyeth South and North. This is the entrance into the King's River in Virginia, where our Englishmen are. (Jamestown, founded 1607.) The North side of it lyeth in 37 degrees 26 minutes, you shall know when you come to shoald water or sounding; for the water will looke Greene or thicke, you shall have ninetie and eightie fathomes (?) and shoalding a pace till you come to ten, eleven, nine, eight, seven, ten and nine fathoms, and so to five and foure fathomes and a halfe.

The twentieth, faire and cleere weather, the winde variable betweene East North-east, and North-east. At foure of the clocke in the morning, wee cast about to the Westward, and stood till noone; at which time I sounded; and had two and thirtie fathomes. Then we takt to the Eastward againe; wee found our height to bee 37 degrees 22 minutes. We stood to the Eastward all night and had very much wind. At eight of the clocke at night we tooke off our Bonnets, and stood with small sayle.

The one and twentieth, was a sore storme of winde and rayne all day and all night, wherefore wee stood to the Eastward with a small sayle; till one of the clocke in the after-noone. Then a great Sea brake into our fore-corse and split it; so we were forced to take it from the yard and mend it; wee lay a trie with our mayne-corse all night. This night our Cat ranne crying from one side of the ship to the other, looking over-board, which made us to wonder; but we saw nothing.

The two and twentieth, stormy weather, with gusts of rayne and wind. In the morning at eight of the clocke we set our fore-corse, and stood to the East-ward under our fore-sayle, mayne-sayle and misen, and from noon to noon we made our way East South-east, fourteene leagues. The night reasonable drie but cloudie, the winde variable all day and night. Our Compasse was varyed 4 degrees Westward.

The lowest latitude recorded in the journal was that of the next day, noon: 35° 41′ N. in the neighborhood of Cape Hatteras. In the afternoon they put about and stood N. W. for the land, never again going as far south. It is difficult to see whence comes the "33 degrees" which appears in Juet's heading to his log.

The sixe and twentieth, faire and hot weather, the winde variable upon all the points of the Compasse. From two of the clocke in the morning untill noone, wee made our way North by East seven leagues. In the after-noone the wind came to the

North-east, and vering to the East South-east wee steerred away North-west fifteene leagues, from noone till ten of the clocke at night. At eight of the clocke at night wee sounded, and had eighteene fathomes, and were come to the Banke of Virginia and could not see the Land. We kept sounding, and steered away North and come to eight fathomes and Anchored there; for the wind was at East South-east, so that wee could not get off. For the coast lyeth along South South-west, and North North-east. At noone our height was 37 degrees 15 minutes. And wee found that we were returned to the same place from whence we were put off at our first seeing Land.

The seven and twentieth, Faire weather and very hot, the winde at East South-east. In the morning as soone as the Sunne was up, wee looked out and had sight of the Land. Then wee weighed and stood in North-west two Glasses, and found the Land to bee the place from whence wee put off nrst. So wee kept our loofe, and steered along the Land, and had the Banke lye all along the shoare; and we had in two leagues off the shoare, five, sixe, seven, eight, nine, and ten fathomes. The Coast lyeth South South-west, and is a white Sandie shoare, and sheweth full of Bayes and Points. The streame setteth West South-west, and East North-east. At sixe of the Clocke at night, wee were thwart of an Harbour or River, but we saw a Barre lye before it; and all within the Land to the Northward, the water ranne with many Ilands in it. At sixe of the clocke we Anchored, and sent our Boate to sound to the shore-ward, and found no lesse than foure and a halfe, five, sixe, and seven fathomes.

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SETTING THE TOPSAILS ON THE HALF MOON. THE MIZZEN WAS SELDOM USED EXCEPT WHEN HOVE TO ON THE WIND OR IN WEARING OR TACKING SHIP

The eight and twentieth, faire and hot weather, the winde at South South-west. In the morning at sixe of the clocke wee weighed, and steered away North twelve leagues till noone, and came to the Point of the Land; and being hard by the Land in five fathomes, on a sudden wee came into three fathomes; then we beare up and had but ten foote water, and joyned to the Point. Then as soone as wee were over, wee had five, sixe, seven, eight, nine, ten, twelve and thirteene fathomes. Then wee found the Land to trend away North-west, with a great Bay and Rivers. (Probably Delaware Bay.) But the Bay we found shoald; and in the offing wee had ten fathomes, and had sight of Breaches and drie Sand. Then wee were forced to stand backe againe; so we stood backe South-east by South three leagues. And at seven of the clocke wee Anchored in eight fathomes water; and found a Tide set to the North-west and North North-west; and it riseth one fathome, and floweth South South-east. And he that will thoroughly Discover this great Bay, must have a small Pinnasse, that must draw but foure or five foote water, to sound before him. At five in the morning we weighed, and steered away to the Eastward on many courses, for the Norther Land is full of shoales. Wee were among them, and once wee strooke, and wee went away; and steered away to the South-east. So wee had two, three, foure, five, sixe, and seven fathomes, and so deeper and deeper.

The nine and twentieth, faire weather, with some Thunder and showers, the winde shifting betweene the South South-west, and the North North-west. In the morning we weighed at the breake of day, and stood toward the Norther Land, which we found to bee all Ilands to our sight, and great stormes from them, and it is shoald three leagues off. For we comming by them, had but seven, sixe, five, foure, three, and two fathoms and a halfe, and strooke ground with our Rudder, we steered off South-west one Glasse, and had five fathoms. Then wee steered South-east three Glasses, then wee found seven fathomes, and steered North-east by East, foure leagues, and came to twelve and thirteene fathoms. At one of the clocke, I went to the top-mast head and set the Land, and the bodie of the Ilands did beare North-west by North. And at foure of the clocke, wee had gone foure leagues East South-east, and North-east by East, and found but seven fathoms, and it was calme, so we Anchored. Then I went againe to the top-mast head, to see how farre I could see Land about us, and could see no more but the Ilands. And the Souther point of them did beare North-west by West, eight leagues off. So wee rode till mid-night. Then the winde came to the North North-west, so wee waighed and set sayle.

The thirtieth, in the morning betweene twelve and one, we weighed, and stood to the Eastward, the winde at North North-west, wee steered away and made our way East South-east. From our weighing till noone, eleven leagues our soundings were

eight, nine, ten, eleven, twelve and thirteene fathomes till day. Then we came to eighteene, nineteen, twentie, and to sixe and twentie fathoms by noone. Then I observed the Sunne, and found the height to bee 39 degrees 5 minutes, and saw no Land. In the after-noone the winde came to North by West; So we lay close by with our forsayle and our mayne-sayle, and it was little winde until twelve of the clocke at mid-night, then wee had a gale a little while. Then I sounded, and all the night our soundings were thirtie and sixe and thirtie fathomes, and wee went little.

The one and thirtieth, faire weather and little wind. At sixe of the clocke in the morning we cast about to the Northward, the wind being at the North-east, little wind. At noone it fell calme, and I found the height to bee 38 degrees 39 minutes. And the streames had deceived us, and our sounding was eight and thirtie fathoms. In the afternoone I sounded againe, and had but thirtie fathomes. So we found that we heaved too and fro with the streames of the Tide, both by our observations and our depths. From noone till foure of the clocke in the after-noone it was calme. At sixe of the clock wee had a little gale Southerly, and it continued all night, sometimes calme, and sometimes a gale; wee went eight leagues from noone to noone, North by East.

The first of September, faire weather, the wind variable between East and South, we steered away North North-west. At noone we found our height to bee 39 degrees 3 minutes. We had soundings thirtie, twentie seven, twentie foure, and twentie two fathomes, as wee went to the Northward. At sixe of the clocke wee had one and twentie fathomes. And all the third watch till twelve of the clocke at mid-night, we had soundings one and twentie, two and twentie, eighteene, and two and twentie fathoms, and went sixe leagues neere-hand North-Northwest.

The second, in the morning close weather, the winde at South in the morning; from twelve untill two of the clocke we steered North North-west, and had sounding one and twentie fathoms, and in running one Glasse we had but sixeteene fathoms then seventeene, and so shoalder and shoalder untill it came to twelve fathoms. We saw a great Fire, but could not see the Land, then we came to ten fathoms, whereupon we brought our tackes aboord, and stood to the Eastward, East South-east, foure Glasses. Then the Sunne arose, and we steered away North againe, and saw the Land from the West by North to the North-west by North, all like broken Ilands, and our soundings were eleven and ten fathoms. (Running along the Jersey coast.) Then wee looft in for the shoare, and faire by the shoare we had seven fathoms. The course along the Land we found to be North-east by North from the Land which we had first sight of untill we came to a great Lake of water, as wee could judge it to bee, being drowned Land which made it to rise like Ilands, which was in length ten leagues. The mouth of that Lake hath many shoulds, and the Sea breaketh on them as it is cast out of the mouth of it. And from that Lake or Bay, the Land lyeth North by East, and wee had a great streame out of the Bay; and from thence our sounding was ten fathoms, two leagues from the Land. At five of the clocke we Anchored, being little winde, and rode in eight fathoms water, the night was faire. This night I found the Land to hall the Compasse 8 degrees. For to the Northward off us we saw high Hills. For the day before we found not above 2 degrees of Variation. This is a very good Land to fall with, and a pleasant Land to see.

EXPLORING THE HUDSON RIVER

The third, the morning mystie untill ten of the clocke, then it cleered, and the wind came to the South South-east, so wee weighed and stood to the Northward. The Land is very pleasant and high, and bold to fall withall. At three of the clocke in the after-noone, wee came to three great Rivers. So we stood along to the Northermost, thinking to have gone into it, but we found it to have a very shoald barre before it, for we had but ten foot water. Then wee cast about to the Southward, and found two fathoms, three fathoms, and three and a quarter, till we came to the Souther side of them, then we had five and sixe fathoms, and Anchored. So wee sent in our Boate to sound, and they found no lesse water than foure, five, sixe, and seven fathoms, and returned in an houre and a halfe. So wee weighed and went in, and rode in five fathoms, Oze ground, and saw many Salmons, and Mullets, and Rayes very great. The height is 40 degrees 30 minutes.

The fourth, in the morning as soone as the day was light, wee saw that it was good riding farther up. So we sent our Boate to sound, and found that it was a very good Harbour; and foure and five fathomes, two Cables length from the shoare. Then we weighed and went in with our ship. Then our Boate went on Land with our Net to Fish, and caught ten great Mullets, of a foote and a halfe long a peece, and a Ray as great as foure men could hale into the ship. So wee trimmed our Boate and rode all day. At night the wind blew hard at the North-west, and our Anchor came home and wee drove on shoare, but tooke no hurt, thanked bee God, for the ground is soft sand and Oze. This day the people of the Country came aboord of us, seeming very glad of our comming, and brought greene Tabacco, and gave us of it for Knives and Beads. They goe in Deere skins loose, well dressed. They have yellow Copper. They desire Cloathes, and are civill. They have great store of Maiz or Indian Wheate, whereof they make good Bread. The Countrey is full of great and tall Oakes.

The remainder of the journal of this voyage is of more interest to the historian than the seaman, and is, moreover, too well known to warrant repeating verbatim. After ascending the river to the limit of navigability and learning all he could about the adjacent country and its peoples, Hudson dropped down again to the Bay and victualled his ship for the voyage home. He sailed from the Lower Bay the 4th of October, and "arrived in the Range of Dartmouth in Devonshire the seventh November," completing a voyage of over seven months on the North Atlantic and Arctic Oceans and along the shores of the New World.

In a later issue of YACHTNG will appear the account of the fourth and last voyage of the great navigator, and of the mutiny which cost him his life, told by Abacuk Prickets, one of the mutineers.

Handy Motor Tenders of Commerce

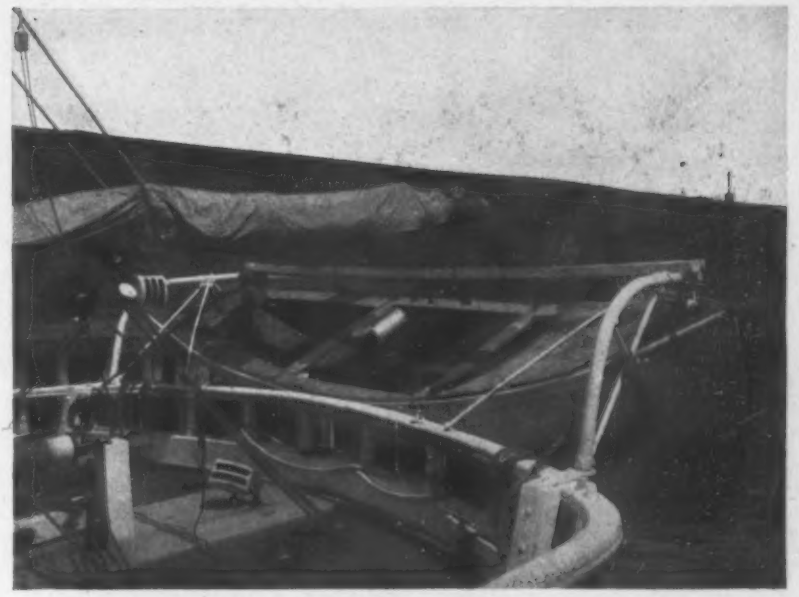
The Motor-Equipped Ship's Boat an Important Part of a Modern Windjammer's Equipment. Their Growing Use in the Navy and Revenue Cutter Service

By ALLEN O. GOOLD

AMONG the widely varying classes of service which fall to the lot of small motor-propelled craft, one of the most important is their use in the capacity of tenders for large vessels, until to-day one finds the ubiquitous motor tender swinging at the davits of many large pleasure craft propelled by steam, sail or motor, or acting as captain's gig for the cruisers and battleships of our own and foreign navies. It is no uncommon sight to see them hanging over the taffrail of the big New England coal schooners and even suspended from the clumsy wooden stern davits of the "down-East packets," those bluff-bowed two-masters now almost crowded off the ocean by the more aggressive steam and gasolene coast freighters. Many of the United States revenue cutters also carry a motor launch or dory, and the Lighthouse Establishment and other government departments find them invaluable for use in connection with the lightships, lighthouse tenders and other steamers. Even small sailing yachts often tow a diminutive "power dink" to do landing duty and to permit its ever-ready motor to take the place of the time-honored but back-breaking "white ash breeze" when there chances to be a lack of wind and towing home becomes necessary. It is truly astonishing how much heavy towing can be accomplished by a very insignificant-looking power tender.

The types of motor tenders which are carried by yachts of different classes vary almost as widely as the yachts themselves and are sufficiently well known to yachtsmen not to need further description here.

For some years after the internal-combustion motor had become an important factor in the fishing industry and had been welcomed throughout the commercial coastwise fleet, not to mention the pleasure flotilla, the Navy Department of the United States looked askance at the newcomer in the field of marine propulsion. The heavy, expensive, but, it must be admitted, efficient, steam cutter was for long without a rival in the field of mechanically propelled naval tenders; and while these ever-reliable little steam craft are still carried upon every United States warship, and will doubtless continue to find favor with the Navy Department for some years to come, it is significant that on several of the battleships the captain's gig is now a motor-driven boat of better than average speed. The Mississippi's boat was, I think, the first of its type, and was a success from the beginning, making a speed of 12 miles per hour. This boat has her 20 H. P. motor installed beneath a 'midship deck, with the operator's cockpit aft and officer's space forward. The cruiser Chester has a larger and more powerful gig, 35 feet in length, with a 40-H. P. heavy duty motor, and this latter craft has proved even more successful than the earlier boat. Other naval vessels are rapidly being equipped in similar fashion. It requires no more than an ordinarily prophetic vision to foresee the eventual replacement of the older steam launches and cutters with powerful heavy-duty motor launches in all branches of the naval service; and the service should be the gainer from the change.

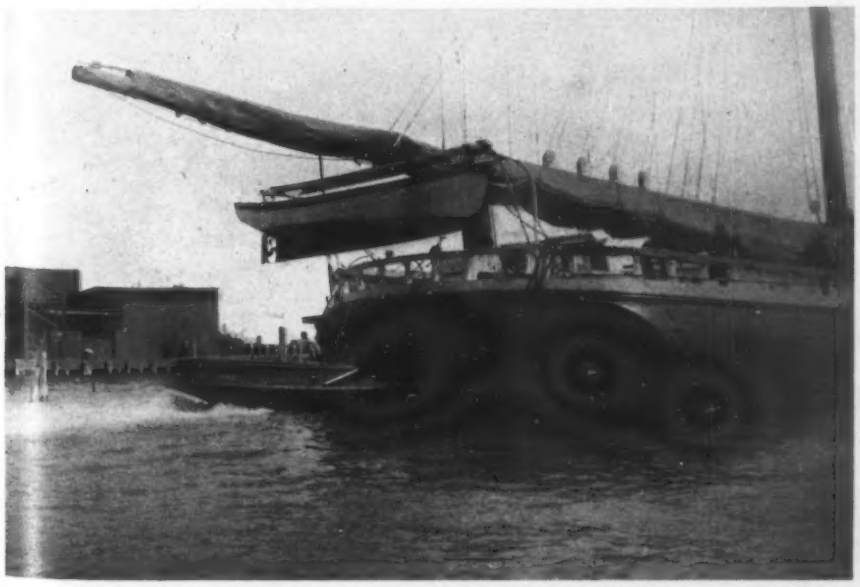


FIVE CONCENTRATED H. P. SLUNG AT THE STERN OF A COASTER MAKES AN EFFICIENT OUTFIT

At present the steam plant, as installed in these craft, utilizes a large portion of the cockpit space, and even granting that the installation is unusually compact and efficient for a steam outfit, it is undeniable that the gasolene motor requires far less room, that the weights can be carried lower, thus increasing the stability, that one man less is required to handle the engine, and that, since these boats are of necessity always ready for service while in port, the expense of maintaining the fires while "standing by" is eliminated, fuel being consumed only while actually under way.

It is unnecessary at this stage of progress of the internal-combustion engine to emphasize the fact that such boats could easily be made as powerful and reliable as the steam launches which they would displace, and they would certainly be as seaworthy, if of equally good model. The old bugbear of the danger of storing and handling gasolene is a thing of the past, and certainly should have no bearing upon the matter in the navy, where the men are intelligent, disciplined and accustomed to the handling of high explosives of the most dangerous character.

The vessels of the United States Revenue Cutter Service are already using the motor-driven launches with complete success. One boat which has frequently come to the writer's attention is the 28-foot launch of the cutter Androscoggin. This boat is built for con-



NEARLY EVERY FOUR AND FIVE-MASTER CARRIES A POWER BOAT OVER ITS STERN

THE WHALEBOAT STERN MAKES A GOOD ROUGH-WATER MODEL FOR A SCHOONER'S YAWL BOAT

tinuous service, and is of generous draft and substantial construction. She is propelled by a two-cylinder, 14 H. P., four-cycle motor, which furnishes all the power the boat can use, and, to use an expression which is fast becoming superfluous, "is as reliable as steam." She is fitted with the regulation navy type of awning, and is in almost constant service, winter and summer.

The U. S. R. S. Woodbury carries one of the "Gurnet" dories as a part of her boat equipment, and while this is a light boat for such service it has given excellent satisfaction. The lighthouse tenders are also using some of the "Gurnet" dories, and many of the heavy working boats used for landing stores at the light stations have been fitted with motors, greatly lessening the labor of the crew.

The Cape Elizabeth Lightship, No. 74, uses a Seabright dory to carry the keepers to and from their vessel. As this light-vessel is stationed several miles out at sea, a powerful and seaworthy type of tender was necessary. This motor dory is 26 feet in length, and is driven by a two-cylinder motor of 12 horsepower, with reverse gear. She is admirably suited to the work, and is both smart and seaworthy. The motor amidships is protected from the weather by a removable wooden casing, which incloses it. The tendency to-day in all of the government departments appears to be to increase the fleet of these gasolene-driven boats, and since they almost invariably "make good" this is little to be wondered at.

A rather novel use of the small gasolene motor on windjammers is made by the big coal and lumber schooners plying between New England coast ports and the Southern coal and lumber shipping points, which are now almost universally equipped with motor yawl-boats. These boats are carried upon the schooners' stern davits, and are generally from 20 to 25 feet in length. Seaworthiness, carrying capacity and durability are their cardinal virtues, but a bit of speed is not an unappreciated feature. Indeed, some of the captains take not a little pride in the capabilities of their motor yawls, and keep the little craft in a most creditable state of cleanliness and all-round efficiency. Most of these boats are similar in model to the regular four-oared yawl boat, being entirely open and with a square transom stern and have an outside rudder, which can be readily unshipped. Other boats are built with the whaleboat or canoe stern and short decks, while still others have a regular cockpit with surrounding coaming.

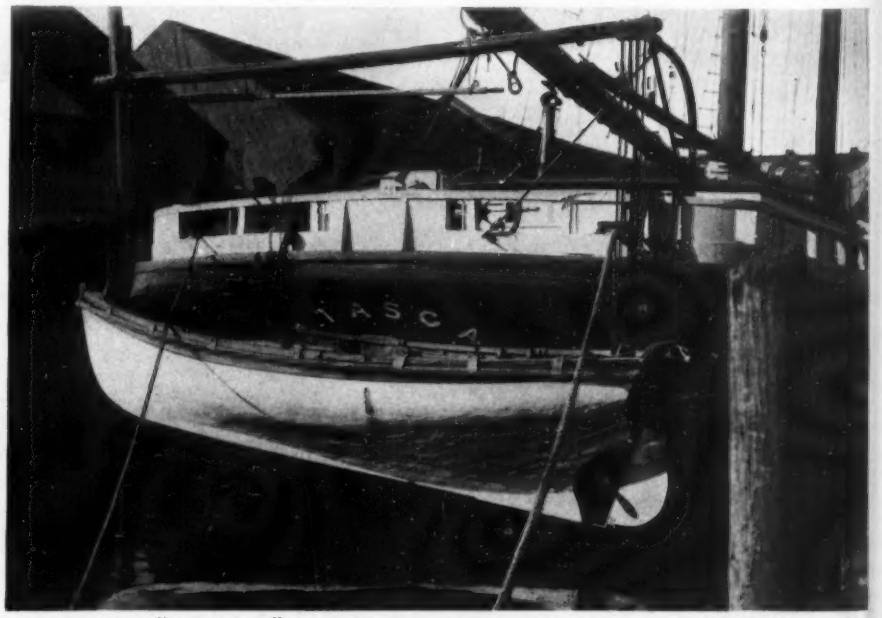
As a general thing, single-cylinder, two-cycle engines of about five horsepower are installed, but some two-cylinder motors are used and a few single-cylinder, four-cycle machines. Usually the schooner's engineer has charge of the motor tender. Reverse gears are sometimes installed and add very much to the handiness of the boats, as, in fact, is the case with all types of craft.

These boats are capable of doing a good bit of towing when no tugboat is at hand, and Capt. E. L. Montgomery, of the Thomaston three-master Robert McFarland, tells of a case where his 6 horsepower boat towed the McFarland over 12 miles at one stretch in very creditable time. This boat of the McFarland's is, by the way, a good type of the power yawl boat. She is 24 feet long, 8 feet beam and of 3 feet draft. She makes a speed of 8 miles per hour with a 6 horsepower motor. The McFarland is engaged in the Southern pine lumber trade.

The big coal carrier Fuller Palmer boasts of a large and fast square-sterned power yawl fitted with a two-cylinder motor; the Boston five-master George P. Hudson has a staunch 23-footer with a 4 horsepower engine; the Singleton Palmer carries a very deep and able boat, with decks and coamings complete, while the six-masters Addie M. Lawrence, Alice M. Lawrence and practically all the schooners of the extensive Winslow fleet have efficient power yawl boats.

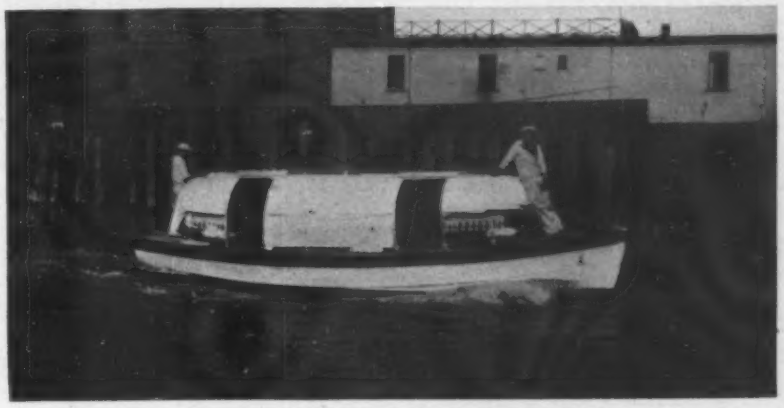
As life-savers, these motor yawl boats are not to be ignored. Capable of withstanding a heavy sea when skilfully handled, these craft have the power and ability to take off the crew when abandoning ship under very strenuous weather conditions, and can cover long distances at sea when required. Only a few years ago such an instance was noted in the newspapers. A large schooner carrying a motor yawl foundered at sea. At the last moment the master gave orders for all hands to take to the small boat, and soon after being abandoned the schooner went down in deep water. No sail being in sight at the time the motor was started, and instead of drifting about for days in good, old-fashioned way, waiting to be picked up by some passing vessel, the sturdy little craft started briskly out to find one. This she succeeded in doing not long after, and running right up *from astern* on the sailing craft, hailed her, and the shipwrecked crew was soon housed in safety and comfort and on their way back to port.

The masters of the small two-masted cargo schooners locally known as "down-East packets" have been quick to appreciate the benefits of the motor-driven yawl boat, and to-day nearly all of the fleet which dock on the westerly side of Widgery's Wharf, Portland, carry one of these handy little towboats hanging across the stern. These boats are of smaller size than those of the big



EVEN THE "DOWN EAST" PACKET SKIPPERS FIND THE POWER YAWL A GREAT SAVING

coasting schooners mentioned above, usually ranging in length from 14 to 18 feet over all, and are fitted with motors of about 4 horsepower. They are all deep boats, with plenty of dead rise and propellers well below the surface when afloat. They have good beam, and, with ample power for their size, they make serviceable tow boats. In that capacity they are in frequent use in calm weather and in manœuvring the vessel in close quarters about the wharves, in crowded anchorages, or in narrow channels.



POWER LAUNCH OF THE REVENUE CUTTER ANDROSCOGGIN. IN SERVICE WINTER AND SUMMER

The masters of vessels whose equipment includes a motor tender invariably speak in the highest terms of the little craft, and often, after enthusiastically recounting their virtues and achievements, the skipper will add, "I don't see how we ever got along at all before we had the motor boat."

When one considers the amount of manual labor that one of these little craft saves, he does not wonder that the skippers of these 'longshore vessels speak as they do. Often anchored well out in the stream, several miles from shore, with a short crew of only three or four men, many a back-breaking pull is saved, as well as many hours of time, in getting orders, communicating with owners and getting to and from shore. If a poll were taken of the foremast hands it is likely that they would speak even more enthusiastically of the concentrated horsepower stowed away under a thwart.

Making a Motor Boat in the Foothills of Mount McKinley

How a Resourceful Miner and Prospector Built a Successful Boat Under Primitive Conditions

By EMIL E. HURJA

ALASKANS are a resourceful lot, as many a wandering "chechaco" of the North will attest. "Sourdoughs," impervious to the glamour of life on the last frontier, look lightly on their achievements. To my notice, one day this spring, came a motor boat really deserving of the title "home-made." It was lying on the shore of the Chena slough, tributary to the Tanana River some 300 miles from the mighty Yukon, nearly in the heart of the mining camp of Fairbanks.

The resourceful "sourdough" who built the boat was a miner and prospector whose habitat was in the headwaters of the Kantishna River, a stream that gains its volume from the melting glaciers of Mount McKinley, North America's highest peak. His name I found to be Nels Henderson, and he had just come down from that section on his annual outfitting trip. He went up there last fall, a short time previous to the freeze-up, which comes in the latter part of September, and remained there during the whole winter engaged in prospecting work. When the rivers break up and the ice sheets of winter slip out of the streams, it is usually pretty well along in the month of May. Miners such as Henderson are mighty glad to get out to the larger camps after their eight months' labor in the solitudes; so it was that Henderson came down last spring shortly after the break-up took place.

Henderson's boat, which has no name, but which has proved serviceable and valuable, was born at Diamond City, a comparatively deserted mining settlement 45 miles up the Bearpaw River, which flows into the Kantishna about 125 miles from the mouth of that stream. Diamond City was once a prosperous mining settlement at the time the stampede was on, and the gravel bodies were not probed well enough to demonstrate that the camp was only a "wage camp" for the poor man.

In the summer of 1910 Henderson went up the Kantishna and Bearpaw Rivers in a little launch that he bought in Fairbanks. It was a product of the "Outside," and had been shipped in by steamship and stern-wheeler. The launch was not big enough for his needs; he could not transport as large loads as he wanted; so when winter came he decided to rest from his prospecting for a time and build a craft such as he desired.

With axe and saw he cut down a few of the spruce trees that grew in the interior of the territory, and, later, hauled them to his cabin on the claim, with the aid of his team of Malamute dogs.

A 30-FOOT MOTOR BOAT MADE FROM WHIP-SAWED LUMBER AT THE BASE OF MOUNT MCKINLEY, ALASKA

Then started the work of building. A scaffold-like trestle was rigged up and the tedious work of whip-sawing the logs into boards began. The weather was cold, the mercury in his little thermometer dropping at times to 50, 60 and 70 degrees below zero. On the coldest days he did not venture out, choosing to let the tiresome work of sawing go over until the weather softened.

The logs were finally sawed and he had his lumber ready.

(Continued on page 56.)

The Season on the Inland Lakes

What the Two Big Associations of the Middle Northwest Did Last Season. Plans for Next Summer

The Inland Lake Yachting Association

By WALLACE MEYER

WHILE it is still too early to assert with any degree of authority that the 1913 fleet of the Inland Lake Yachting Association will develop yachts faster than were the champions of 1912, the statement may be made that already several new racers have been ordered for next season. In one instance at least building is under way, the Jones & La Borde shops, at Oshkosh, Wis., being at work on a boat for the Neenah-Nodaway Yacht Club. Other clubs in the association report that early starts will be made toward fast boats for 1913.

But this talk of new racers must not be understood as a reflection on the boats of 1912, for never was there a faster or more evenly matched fleet assembled for an I. L. Y. A. regatta than that which took part in the great races on Lake Winnebago, at Oshkosh, during the third week in August. The early start toward next year's boats is merely cited as proof of the healthy rivalry and the good spirit that obtain among the clubs and sailors of the Inland Association.

There will be an important change in the sailing rules next year, for at the annual meeting of the I. L. Y. A., held at the Oshkosh Yacht Club, Skipper Jack Ordway, of White Bear, Minn.; Commodore O. L. Schmidt, of Lake Geneva; Edward Rosing, of Chicago, and W. L. Davis, of Neenah, Wis., supported the following amendment, which was unanimously adopted: "When a yacht is sailing free before the wind with spinnaker set, that yacht shall have the right of way over a yacht that is on the wind, or, in other words, making a beat to windward." Sailors will see at a glance that this change will have far-reaching effects. On two or three occasions during the last regatta boats bearing down on a buoy with spinnakers set were forced off their course by yachts coming back beating to windward, and it was felt that it is an antiquated racing rule which gives the latter yacht the right of way over the former.

It may be remarked, before going back to actual sailing, that at this meeting several invitations were received for future regattas, but the Association voted unanimously to return to Oshkosh next year. The Oshkosh Yacht Club, with Com. Charles P. Bray at the head—the Commodore is one of the youngest men who ever held that position—and with an able staff, maintained the reputation for whole-hearted hospitality which it has established through many regattas, and it is a good guess that two regattas out of every three will be held there.

President P. A. Valentine, of New York and Oconomowoc, was unanimously re-elected to head the Association. D. D. Harmon, of Oshkosh, was re-elected secretary. The old executive committee was re-elected, including Commodore Schmidt, C. A. Vandiver, of Minneapolis, and C. W. Hollister, of Oshkosh.

KATHRYN II, CHAMPION OF INLAND LAKE YACHTING ASSOCIATION, 1912

There was no element to detract from the success of the big regatta of 1912. Nine class A boats, two class B's and seven class C's competed, the only disappointment being the second class. This loss of strength among the second-raters was the subject of a great deal of comment, and the consensus of opinion was that when sailors graduate from the catboats they find it as easy to sail an A as a B boat; hence the decline of the latter class.

Never were nine faster or more evenly matched A boats seen in one fleet. Day after day the tail-enders would finish within ten or fifteen minutes of the winner, and this is a remarkable tribute to the skill of the sailors when it is considered that all races were over a 12-mile course. Three of the five championship races were around a triangular course, three times around. The other two races were to windward and return, three times around.

A week of racing before the main regatta enlivened Lake Winnebago as an introduction to the Inland. The principal days were Friday, when the Lake Butte des Morts Yacht Club held its regatta, and Saturday, when the Oshkosh Yacht Club regatta was held. Marion Jean, of Minnetonka, drew first blood by winning the beautiful Sawyer Cup in the Butte des Morts regatta, with White Bear's Troubadour II second. Kathryn II came home in tow with a broken spar that day. The remaining four boats finished close up, but the heavy weather proved just what the Minnesota boats needed.

The next day, in lighter weather, Kathryn II ran away from the fleet and won the historic Felker Cup, which has been raced for more than a quarter of a century on Lake Winnebago, and which the old Kathryn won four times in succession, with Skipper Buckstaff at the helm the last three times. Scout, of the Oshkosh Yacht Club, sailed to victory in the class B race on Friday. On the day folowing, Cubanola, the White Bear B boat, won the Oshkosh Cup; and it may be remarked at this point that the White Bear yacht took three races from Scout the week of the Inland, and thus won the championship.

The Saturday morning race for C boats, for the Commodore Bray Challenge Cup, will long be remembered on account of the high seas which rolled over the lake, knocking the catboats about badly and making their crews work as they never worked before. There were seven of these little boats, and they had a week of arduous sailing, Outagamie, of Lake Geneva, finishing first in the Inland Championship, Shillalah second, and Cygnet third.

The A boats that took part in the championship racing included Kathryn II, of Lake Butte des Morts (Oshkosh); Marion Jean, of Minnetonka; Troubadour II, of White Bear; Menasha, of Menasha; Glyndwr II, Oshkosh; Handy Andy IV, Oconomowoc; Geneva, Lake Geneva; Gretchen II, Neenah-Nodway (Neenah);

Thelma, Green Lake; and they ranked in that order at the close of the regatta.

Kathryn II, of the Lake Butte des Morts Club, of Oshkosh, which won the championship and the majority of the trophy cups, was a new boat, but had an experienced crew, mainstays in which were Skipper John Buckstaff and L. Frank Gates, who handled the main sheet. Bowen, Hollister and Chapman, other members, were also veterans.

START OF THE CLASS A BOATS IN A NORTHWESTERN ASSOCIATION'S REGATTA

When Thursday night came, with only one more day's sailing, Marion Jean had two firsts, a second and a sixth to her credit; Troubadour II had one first, a second and a seventh, and Kathryn II one first, a second, a third and a sixth. Thus the championship lay between these three boats, for, even though one of the other six racers won the Friday race, Marion Jean, with two wins, had the necessary margin.

The start of the fifth and deciding race was beautiful, but slow, for it was a light offshore breeze that drifted the yachts, with all canvas set, toward the northeast buoy and then down toward the southeast buoy. It was not Kathryn II, the home favorite, which took the lead, either, but Handy Andy IV, with Lester Armour at the tiller. Slowly, but without faltering, Handy Andy IV forged ahead. Near the southeast buoy all the sails fluttered for a moment; then a stiffer, steadier breeze set in from the southeast, a wind which grew heavier all afternoon, and the boats experienced the strange feat of going around the triangle with spinnakers set all the way.

The balance of the race was a succession of thrills. For a time Handy Andy IV held its lead, but Troubadour II and Kathryn II hung grimly astern, while Menasha and Marion Jean several times crawled up abreast of the leaders, failing, however, to pass them. Gretchen II, one of the fastest boats with spinnaker that ever sailed on Lake Winnebago, also worried the leaders, and, from the standpoint of spectators who followed on steamers and yachts, the race became spectacular.

At the southeast buoy the second time around Troubadour II and Kathryn II both overhauled Handy Andy IV, and went down the next leg side by side. At the home buoy Skipper Ordway got Troubadour II around just ahead of Kathryn II, and Buckstaff was forced to trail the other boat out to the northeast buoy and to the southeast.

Kathryn II had only an outside chance to win the championship, for if she finished first Marion Jean must finish third, for a tie, or fourth for a clean-cut Kathryn II victory; and at the southeast buoy, the last time around, Troubadour II led Kathryn II by 34 seconds. Then the two leaders came down the home stretch, Kathryn II's spinnaker being broken out the moment the turn was made.

In the last half mile Kathryn II's sails seemed to draw better than those of the other boats, and she slowly drew away from her great rival from Minnesota until there was open water between them. Then, nearing the judges' boat and the home buoy, Kathryn II moved ahead with an extra burst of speed and finished 32 seconds ahead of Troubadour II. Handy Andy IV was next over, with Menasha, Marion Jean, Geneva, Gretchen II, Glyndwr II and Thelma following.

Fifty-seven seconds after Kathryn II finished the time limit expired. So the 1912 champion of the I. L. Y. A. may be said to have won her honors in a brilliant race against both the magnificent fleet and against the time limit.

THE NORTHWESTERN REGATTA

The annual regatta of the Northwestern Regatta Association resulted in a week of intensely interesting racing, due partly to the unusual weather conditions, though chiefly to the large and evenly balanced entry list. Thirty-seven yachts of the peculiar inland lake scow type were entered—an unusually large fleet. Class A presented Marion Jean, winner of last year's Northwestern Regatta; Wax Wing, last year's Inland Lake champion; Handy Andy IV, an Oconomowoc yacht, with a reputation for speed, and Glyndwr II, feared because of her appearance and the reputation of her crew, as well as ten others of lesser records.

Class B had only two entries, but these furnished some of the best races of the week. Class C showed fourteen entries, mostly 18-footers of the older specifications, but with five 20-footers, which are now permitted in this class. Four of these, however, were equipped with bilge boards heavier than the rules permitted, and so were ruled out. A special C class was formed for them, and their scores were kept separately.

The weather conditions were very peculiar. On the last four days Delavan Lake seemed to be the center of a series of severe rain squalls, and the wind was constantly changing, at times veering around to exactly the opposite direction in an instant and blowing furiously. Sixteen of the twenty races were sailed in the rain.

Marion Jean, after a poor start, lived up to her reputation for speed, and finally won the Championship Cup, and the Northwestern Cup for the second time in two years, by a magnificent bit of sailing in a heavy breeze on the last day. This victory gives her two legs on the Northwestern Cup and makes it necessary for her crew to win it only once more in the next three years in order to secure permanent possession of this most coveted trophy of the inland lakes.

Handy Andy IV showed the speed expected of her at the start, but was unfortunate in the later races and finished second, just six points behind the Marion Jean.

Class C presented an interesting study. It was the first time that 20-footers of the same square-nose type as the eighteens had been allowed to compete against the latter. Speculation as to their respective abilities was rife. At the close of the regatta it was the general opinion that they were considerably faster, although the eighteens had consistently beaten all but one of them. This one—Shillalah, of Geneva—fouled a buoy in the first race, but won the remaining four hands down. She excelled the fleet at all points, at one time running through the lee of eight of her shorter competitors in quick succession. Consistent sailing on the part of Adios, coupled with the Shillalah's complete loss of points on one day, won the championship for Delavan. Unless the rules are changed, it will probably be the last championship of the sort to be won by an 18-footer.

Several disqualifications were necessary because of the large fleets, but every one was efficiently handled and accepted in the most sportsmanlike spirit. At the annual meeting Delavan Lake was awarded the regatta again for next year.

Twelve Months in a "Spouter"

By WALTER NOBLE BURNS

PART IV—In Behring Sea. Cutting Up and Trying Out a Whale

[FOREWORD.—In the previous instalments Mr. Burns has told how, after shipping as a "green hand" on board the whaling brig Alexander at San Francisco, he became infected with the spirit of discontent which was rife in the forecastle when it was learned that the regular custom on whale ships was to pay the men off at the end of the cruise with "one big iron dollar" each, while the profits of the voyage were divided up among the officers and harpooners. He was contemplating an attempt to escape ashore to the coast of Lower California, more for the adventure of the thing than through any actual sense of injury, when a surreptitious examination of a chart changed his mind by showing that there was no inhabited place within a hundred miles of arid shore. While on the sperm grounds of the Pacific, the second mate, a Cape Verde Island negro, with whom the author had been continually at 'swords' points, was drowned in the wreckage of a whaleboat which had been knocked to pieces by a maddened bull sperm.

Later, while among the Hawaiian Islands, Burns got himself into a peck of trouble by two unsuccessful attempts to "jump ship," in one of which he swam for a mile in shark-infested waters before being overtaken and captured by a boat sent out from the ship. For this escapade he was kept on a bread and water diet for a week, besides being treated to a spirited harangue from the "old man"—who, however, failed signally to carry out his terrible threats against the young "greenhorn." During a gale in the North Pacific the captain was swept from his feet by a boarding sea and had his leg broken by the fall; but the ship kept on for Behring Sea under command of the mate. After being frozen in for three weeks they finally lower for a whale, which they get a harpoon into, though it gets away, only to be found floating, dead, the next day.]

TWO boats were sent to secure the whale. I lowered with one. As we came up to the whale I marveled at its immense bulk. It looked even larger than when it had breached and I had seen it shoot up, a giant column of flesh and blood, against the heavens. It had turned belly up, as dead whales always do, its rigid white abdomen projecting above the waves. It seemed much like a mighty white and black rock, against which the waves lapped lazily. Seventy-five feet long the officers estimated it—an unusually large bull whale. I had never imagined any animal so large. I had seen Jumbo, said to be the largest elephant ever in captivity. Jumbo made ordinary circus elephants seem like pigmies. This whale was as big as a dozen Jumbos. The great hairy mammoth, of which I had seen stuffed specimens in museums, would have seemed a mere baby beside this monster of the deep.

The first thing we did was to recover the 800 fathoms of tangled line. As this had to be straightened out and coiled in the boats, it was a long and tedious job. Then with a short, sharp spade a hole was cut through the whale's flukes and a cable passed through and made fast. With both boats strung out along the cable, the men bent to the sweeps, hauling the carcass slowly toward the brig. Meanwhile, the vessel had been sailing toward us. So we had but a hundred yards or so to pull.

The loose end of the hawser was passed through the hawse-hole in the starboard bow and made fast to the fore-bitts at such length that the whale's flukes were held close to the bow. Then, as the brig went forward under short sail, the great body washed back against the vessel's side and lay upon the surface, the head being abreast the wheel on the quarter-deck—which will give an idea of the whale's length.

The gangplank was taken from the bulwarks and a cutting stage lowered over the whale. This stage was made of three broad planks. Two projected from the ship's side, the third joined their outer ends. Along the inside of the third plank was a low railing. Two officers took their station on the outer plank with long-handled spades to cut in the blubber. The spade was enough like a garden spade in shape to suggest its name and was fastened to a long pole. Its cutting edge was as sharp as a razor.

A block and tackle was rigged above the whale, the upper block fastened to the cross-trees of the mainmast and the tackle carried forward to the windlass. A great hook was fastened into the whale's blubber, and everything was ready for the cutting in.

As the officers with their spades cut under the blubber the sailors heaved on the windlass. The blanket piece of blubber began to rise. As it rose, the officers kept spading under it, rolling the whale over gradually. Thus the whale was peeled much as one would peel a roll of bologna sausage. When the great carcass had been rolled completely over the blanket piece of blubber came off. The upper end of it, fast to the tackle hook, was up almost against the cross-trees as the lower end swung free. The largest blanket pieces weighed, perhaps, ten tons. Six were taken off in the process of skinning. The weight of the whale, I should estimate, was roughly something like 100 tons.

When the blanket piece was cut free from the whale it swung inboard, and as it came over the main hatch it was lowered into the hold. There men fell upon it with short spades, cutting it into small pieces and distributing them equally about the ship to prevent the vessel from listing. It took most of the day to strip the whale of its blubber. When this had been finished the great flensed carcass stretched out along the ship's side a mass of blood-red flesh. The final work was cutting in the "old head."

Big John, with an axe, climbed down upon the whale's back. As it was his boat that had struck the whale, the cutting in of the head was his job. Nobody envied him the job. The stripped body of a whale offers a surface as slippery as ice. As the waves rocked the whale, Big John had much ado to keep his footing. Once he fell and almost tumbled into the water. Finally, he cut himself two footholds and began to wield his axe, raining blows upon the neck. He chopped through from the upper neck surface into the corners of the mouth, thus loosening the head and upper jaw from the body. The lower jaw is devoid of teeth.

"ESKIMO MEN, WOMEN AND CHILDREN SWARMED ABOARD"

"A HILLY COAST ROSE AHEAD OF US, AN UTTERLY DESOLATE LAND—SIBERIA"

The tackle hook having been fixed in the tip-top of the head's bowlike curve, the windlass men heaved away. Up rose the head above the bulwarks and swung inwards.

"Lower, lower away!" cried the mate.

Down came the head upon the deck and a great cheer went up. The "old head" was safe. Immediately afterwards the mate came forward with a bottle of Jamaica rum and gave each man a swig. "Bringing in his old head," as it is called, is a memorable event in cutting in a whale, and is always celebrated by dealing out a drink all around.

Great hunks of meat were cut out from the carcass. These were hung over the bow. The meat was served in the form of steaks and sausages in both forecastle and cabin. And let me give my testimony right here that whale steak is mighty good eating. It tastes something like tender beef, though it is coarser grained and of ranker flavor. We preferred to eat it as steaks, though made into meat balls with gravy it was extremely toothsome. I do not know how whale would taste if served on the home table, but at sea, after months of salt horse and "sow belly," it was delicious. The hunks became coated with ice over the bow and kept well. They lasted us for several weeks.

When the carcass was cut adrift it went floating astern. Flocks of gulls and sea birds, that had been constantly hovering about the ship in hundreds waiting for the feast, swooped down upon it. The body washed slowly out of sight, still swarmed over by the gulls.

The head rested in the waist near the poop. It was, I should say, 12 feet high at the crest of the bow. It suggested some strange sort of tent. I stepped inside of it without bending my head and walked about in it. Its sides were shaggy with the long hair hanging from the teeth or baleen, and the interior resembled, in a way, a hunter's forest lodge made of pine boughs. If the head had been in a forest instead of on the deck of a ship, it would have formed an ideal shelter for a winter's night with a wood fire burning at the opening.

Only the lower tip of the head, or what we might call the nose, rested on the deck. It was supported otherwise upon the teeth. I now had my first opportunity to see baleen in its natural setting. The teeth, viewed from the outside, looked something like the interior of a piano. The whale's gums, following the bony skeleton of the jaw, formed an arched and undulant line from nose tip to the back of the jaw. The front teeth were 6 inches long; the back ones were 10 feet. Each tooth, big and little alike, was formed of a thin slab of bluish whalebone, almost flat. The largest of these slabs were 6 inches broad at their base in the gum. The smallest were an inch. All tapered to a point. They were set in the gum with the flat surfaces together and almost touching. They were extremely pliant, and at the lower ends could be pulled wide apart. The inner edges were hung with black, coarse hair, which seemed almost exactly like that of a horse's tail. The hair on the small front teeth was an inch long perhaps; on the back teeth it was from 6 to 10 inches long.

"THE BLANKET PIECE OF BLUBBER FROM THE WHALE BEGAN TO RISE"

THE UPPER JAW OF A WHALE, SHOWING BALEEN OR WHALEBONE

Such teeth are beautifully adapted to the animal's feeding habits. The baleen whale feeds on a kind of jelly fish. We saw, at times, the sea covered with these flat, round, whitish living discs. The whale swims through an area of this food with its mouth open. When it has obtained a mouthful it closes its jaws. The water is forced out between the slab-like teeth; the jelly fish remain tangled in the hair, to be gulped down.

Our first job after the cutting in was to cut the baleen from the jaw. This was cut away in bunches of ten or a dozen slabs held together by the gums. These bunches were stowed away in the hold, not to be touched again until later in the voyage. Then they were brought on deck and each slab of baleen was cut out of the gum separately and washed and scoured with cocoanut rind, obtained in the Hawaiian Islands for the purpose. They were tied up in bales and stowed away again until the end of the voyage. As we shipped the bone secured from this whale back to San Francisco from Unalaska later in July, we washed our baleen soon after catching the whale. But the washing of the bone is usually done after the whaling season is over on the homeward voyage.

While the baleen was being prepared for stowage the lid was removed from the try-works, uncovering the two big copper caldrons. A fire was started in the furnace with kindlings and a handful of coal, but kept going thereafter with tried-out blubber. Two men, dressed in oilskins, were sent down into the blubber room, as the part of the hold was called in which the blanket pieces of blubber had been stowed. Their oilskins were to protect them from the oil that oozed from the blubber. Oilskins are, however, slight protection, as I learned later, when I was sent into the blubber room at the cutting in of another whale. The oil soaks through the waterproof oilskins and saturates one's

DRYING BALEEN ON DECK

clothes and goes clear through to the skin, leaving it as greasy as if it had been rubbed with oil.

A whale's blubber lies immediately below its skin, which is black and rubbery and about a quarter of an inch thick. The blubber is packed between this thin covering and the flesh in a layer of pink and opalescent fat from 6 inches to 2 feet thick. The blubber is so full of oil that the oil exudes from it. One can squeeze the oil from a piece of raw blubber as water from a sponge.

The two blubber-room men with short-handled spades cut the great blankets of blubber into what in whaling parlance are termed "horse pieces." These horse pieces are 2 or 3 feet long and about 6 inches wide. They are pitched into tubs on deck and the tubs dragged forward to the mincing vat. This is an immense oblong tub, across the top of which is fastened a plank. Two sailors with mincing knives are posted at each end of the plank. The mincing knife is like a carpenter's drawing knife, except that the edge is on the outside. The sailor lays a horse piece along the plank. Then grasping the mincing knife by its two handles, he passes the blade back and forth from side to side across the blubber until it has been cut into "leaves," something like those of a book, each leaf perhaps a quarter of an inch thick and all of them held together at the back by the black skin. Thus minced, the horse pieces are pitchforked into the caldrons that were kept bubbling with boiling oil. When the oil has been boiled out of them, the horse pieces, now shrunken and twisted into hard, brittle lumps, are skimmed off and thrown into a vat at the port side of the try-works, to be used later as fuel in trying out the remainder of the blubber. The oil is ladled off into a cooling vat at the starboard side, where, after it has cooled, it is siphoned into hogsheads or vats, and these later are stowed in the hold.

The trying-out of the whale gave several delicacies to the forecastle menu. Hardtack biscuit soaked in buckets of sea-water and then boiled in the bubbling caldrons of oil made relishing morsels. The crisp, tried-out blubber, which looked like honeycomb, was palatable to some. Black whale skin freed of blubber and cut into small cubes and pickled in salt and vinegar had a rather agreeable taste, though it was much like eating pickled rubber. These things, with whale steaks and whale sausages, made trying-out days a season of continual feasting.

At night blubber was put into an iron basket swung between the two chimneys of the try-works and set on fire, making a flaring, smoking yellow blaze, which lighted the ship from stem to stern and threw weird shadows everywhere. The beacon not only gave us plenty of light to work by, but advertised the brig's good luck to any ship which happened within sight of us. In the blubber-room holes were cut in a blanket piece, and rope yarns, having been rubbed upon the blubber, were dropped in the hole and lighted. As they burned they lighted the oil from the blubber. These unique lamps had all the oil in a 10-ton blanket piece to draw on. It was only the wick that gave out. New strands of rope yarn had to be provided from time to time. Three or four of these lamps blazing and spluttering made the blubber-room bright.

Working night and day, it took three days to cut in and try out the whale. While the work was going on the decks were so greasy that we could run and slide anywhere for long distances, like boys on ice. After the whale had been tried out and the oil casks had been stowed below, we fell upon the deck and paintwork with water and lye. Hard work soon had the ship looking as bright as a new pin.

The ship's prow was turned northward after the work on the whale had been finished. I expected that we would run into the ice again. We sailed on and on, but not a block of ice big enough to make a highball did we sight. The white floes and drifts and the frozen continent floating southward, along the coasts of which we had cruised for whale and which had surrounded us and held us captive for three weeks, had disappeared entirely. The warm water from the south, the southern winds and the spring sunshine had melted the ice. Its utter disappearance savored seemingly of magic.

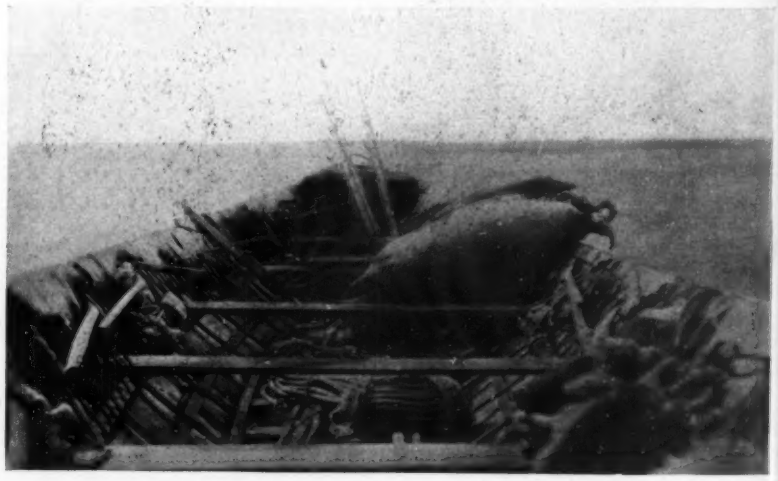
A long, hilly coast rose ahead of us covered with grass, barren of trees or shrubs, dotted with blackened skeletons of old ice—an utterly desolate land. It was Siberia. We put into a little bight, called St. Lawrence Bay. There was a little Eskimo village on the shore. The huts were made of whale ribs covered with hides of walrus and reindeer. In the warm weather some of the hides had been removed, and we saw the white, gleaming bones of the framework. We could see the dogs, with tails curling over their backs, frisking about and hear their clamorous barking.

In this first part of July it was continuous day. The sun set at eleven o'clock at night high in the northwest. Its disk remained barely below the horizon—we could almost see its flaming rim. A molten glow of color remained just above it as it passed across the North Pole until it rose at 1:30 in the morning high in the northeast. All the while it was down bright twilight prevailed—a twilight like that in our temperate zone that immediately follows the sinking of the sun behind a western hill. We could see to read without difficulty.

Soon boats and kyaks were putting off from the village. When we were still a mile or two out, these strange craft came alongside and Eskimo men, women and children swarmed aboard. Very picturesque they looked in clothes made of the skins of reindeer, hair seals, dogs and squirrels, oddly trimmed and decorated with fur mosaics in queer designs. Some of the girls wore over their furs a yellow waterproof cloak made of the intestines of fish, ornamented with needlework figures and quite neat-looking.

The men and the older women had animal faces of low intelligence. The young girls were extremely pretty, with glossy, coal-black hair, bright, black eyes, red cheeks, lips like ripe cherries,

(Continued on page 56.)



WALRUS HIDE BOAT OF THE SIBERIAN ESKIMO

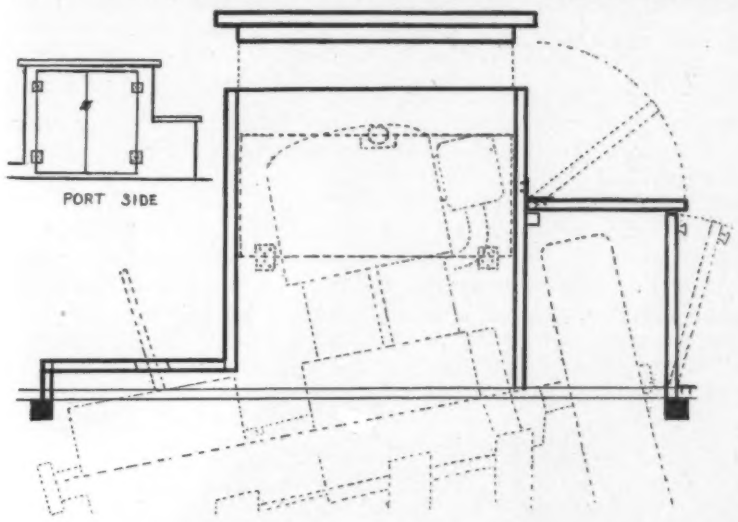
USEFUL HINTS & WRINKLES

Under this head we will publish short articles from the readers of YACHTING, describing original ideas they have worked out for improving the efficiency and handiness of their boats and engines. These will be paid for at space rates. Articles must not be over 500 words in length, should be accompanied by ink drawings where possible, and must be addressed to Editor of YACHTING, 141 W. Thirty-sixth Street, New York. Here is a chance to be a philanthropist by giving to other boat owners information on some of the handy wrinkles you have applied to your own craft.

An Engine Hatch for an Open Boat

In an open boat it is frequently desirable to have the engine covered by some kind of a portable hatch, not only to protect it from the weather, but also to keep any oil or grease from being thrown around and soiling clothes. The accompanying sketch is of a hatch that was built last summer for a boat where the engine was installed in an open cockpit. It is very simple in construction and has many points to recommend it, the principal one being that every part of the engine is accessible without the necessity of removing the entire hatch.

The dimensions here given are to cover a two-cylinder, four-



cycle engine of about 14 horsepower. The hatch is made to rest on the floor of the cockpit, the after end fitting into a notch in the floor planking over a floor beam, covering the reverse gear, as well as the engine. The dimensions of this, on top, are 2½ feet long in a fore-and-after direction by 2 feet wide and 2 feet high, just covering the top of the motor.

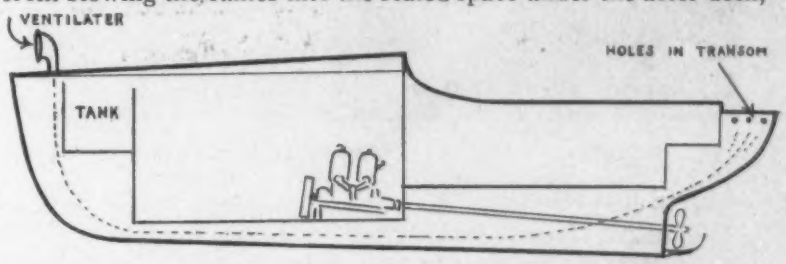
The flywheel is protected by a small box, the upright being hinged to the floor of the cockpit, while the top part over the wheel is hinged to the front of the larger hatch. The latter can be raised and the former dropped down so that the flywheel can be reached for starting. The top of the box is a square hatch that can be lifted to get at the top of the engine, oil cups, etc. On the port side, which is the control side of the engine, where the carburetor, etc., are located, is fitted with two hinged doors the full length of the box, exposing, when open, the entire port side of the engine. On the starboard side is a small door, put on with hinges so that it can drop down, exposing that side of the engine.

If the box is not made too snug a fit, all the wiring may be carried inside of it, so that it will not be affected by any water that may come aboard. Wooden chocks on the floor at each corner will hold it in position. By a hasp and padlock the hatch and the hinged door over the flywheel may be locked, assuring no one's tampering with the engine when the boat is left alone.

Ventilating the Bilge

So many accidents have happened, especially in cabin launches, through the accumulation of gasolene fumes in the bilge from drippings from the carburetor or from leakage from cocks in pipe line, that the importance of proper ventilation cannot be overlooked, though, as a rule, no precautions are taken to properly ventilate under the floor boards.

One of the best ways to accomplish this ventilation in a small boat where the cabin is enclosed forward is to mount a cowl ventilator on a deck plate in the forward deck, where the air will blow through the forepeak and filter through the bilge, above the frames and under the floor. To let this air out and to keep it from blowing the fumes into the sealed space under the after deck,



bore a few holes through the sheer strake at the stern, or in the top part of the transom, if the boat has a transom stern. These holes need not be large, and, if placed close to the beading, will not be noticed. In place of these holes one or more screw-top ventilating ports can be screwed in the transom or on the after deck. These may be opened or closed, as desired. In this way a constant circulation of air is assured through the bilge under the cabin and cockpit floors and out through the transom.

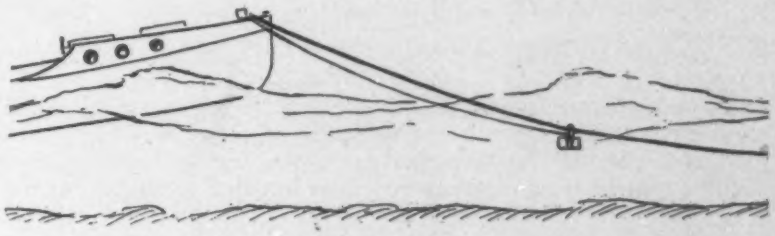
For Keeping the Anchor from Dragging

A very simple device for helping to make an anchor hold when anchoring in an exposed place, and one which I am surprised is not in more common use by motor boat and sailboat skippers, is the placing of a weight on the cable or rode midway between the boat and the anchor.

In a small boat under 35 feet long the weight need not be excessive—from 50 to 75 pounds answering. The way to use this is as follows:

If caught in a bad position and anchoring where there is danger of dragging, and you have given the boat all the cable you can spare, take a sand bag or a pig of lead or iron ballast from the hold, tie a rope around it and fasten it to a small rope becket around the rode or cable. Make fast to this weight a small line (signal halyards or lead line will do), throw the weight over the bow and allow it to slide down the cable some 12 or 15 fathoms, depending on the amount of cable you have out. The small line will keep the weight from sliding down beyond the point you desire, and can be used to haul it up again afterwards. The weight of this "pig" or sand bag acts as a spring on the cable and will prevent the hard jerks that a boat jumping in a seaway makes on the anchor.

If a chain cable is used, it may prevent the rope becket from sliding down; but in this case a jib hank or a snap hook riding over the chain instead of the rope becket will work satisfactorily.



The Month in Yachting

ALSORIE II, AN ABLE 43-FOOTER, BUILT IN 1912 FOR NEW ENGLAND COAST CRUISING

THAT the Englishmen intend to keep the British International Trophy which Maple Leaf captured last year as long as possible is evident from the activity which motor boat men are displaying abroad in regard to building boats as possible defenders. The winning of the Cup has been a boon to motor boat racing in England, and should do much to stimulate the sport next year. Heretofore motor boat racing has not occupied much of a place in the yachting programme of the conservative Englishman. Mr. Hollingsworth, of the British Motor Boat Club, is having a defender built by Brooke, while Mr. Comber is having two big Napier engines installed in a racing hull from which very high speed is expected. Mr. Mackay Edgar, owner of the Maple Leaf IV, has stated that he will again be in the field with a defender, while Mr. J. H. Bell is also building a boat with this race in view. The contest will be held next year in August on the Solent.

On this side of the water motor boat owners are not asleep, and a number of orders have been placed for boats for this event. The challenge of the Motor Boat Club of America has been accepted by the Englishmen, and the club is laying plans for the building of boats by a number of members of the organization. It looks, from present indications, as if ten or a dozen boats will be built here to take part in the trial races to select the team to go to England. These trial races will be held in waters adjacent to New York early in July, giving the boats plenty of time to be shipped across and properly tuned.

It is rumored that Mr. J. Stuart Blackton, whose boats figured largely in the defense of the cup this year, and who, it will be remembered, was not allowed to steer his own boat, owing to the fact that he is not an American citizen, will appear next year as a defender again, and that he will build a boat on the other side to try to retain the cup in England. How much truth there is in this rumor I do not know. Mr. Blackton is an Englishman, and he could enter for the defense of the cup under the present rules if the boat and engine were built in England. It is also said that he will build a sailing yacht for racing in the Q class at the Atlantic Yacht Club this season, as he has again been elected Commodore of the Gravesend Bay organization.

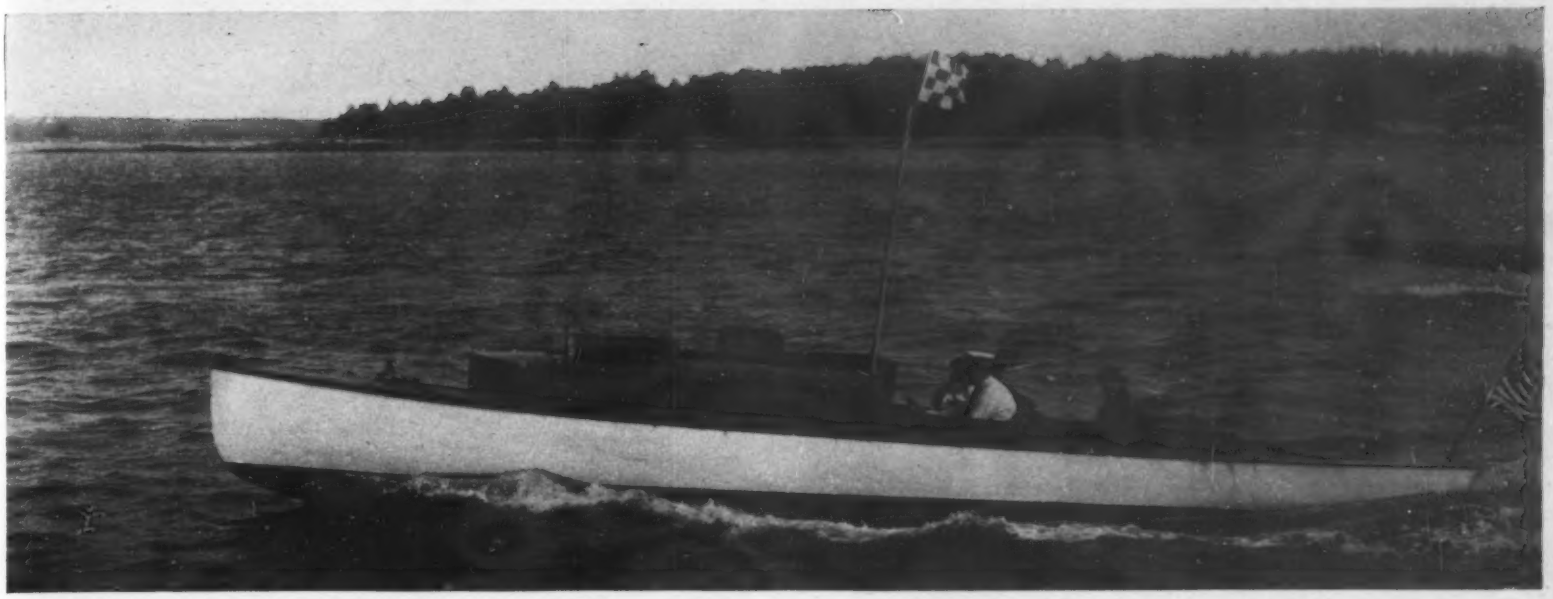
Up on the Great Lakes the Inter-Lake Yachting Association had an interesting meeting at Cleveland on December 7, at which Commodore George H. Worthington was again elected Commodore of the Association. At this meeting plans for the boating end of the Perry Centennial Celebration, which will be held next year on the hundredth anniversary of the battle of Lake Erie, were discussed. Commodore Worthington is also president of the Centennial Commission, and the Great Lakes sailors are planning to make this regatta the biggest of its kind ever held. The regatta will probably be held at Put-in-Bay, and, from present indications, it looks as if there will be a solid week of sailboat racing under the Inter-Lakes Yachting Association, followed by a week of power boat racing that will attract a big fleet and bring the fastest boats of every type to Put-in-Bay. Plans have still to be perfected, but all boating men should mark with a red circle the date of the regatta when it is announced. Lake Erie is particularly well situated to draw boats, not only from Canada and the Middle West, but also from the Atlantic seaboard.

At the recent meeting of the American Power Boat Association, a full report of which will be found elsewhere in this issue, it was gratifying to note that the representation of the 130-odd clubs was not only large, but enthusiastic. The members were keenly alive to the need and the possibilities of and also of the advantages to be gained from a strong parent association. Delegates were present from Canada, Nova Scotia, from the South and from many Great Lakes clubs.

In this connection it is pertinent to suggest that it would be a wise thing if the clubs in the vicinity of New York could get together to form local sections. It should be an easy thing to make the clubs of Long Island, for instance, see the advantages of a local Long Island section, while the Hudson River section, where local interests are very much the same, should be a benefit to those clubs that are already in the Association and are located in the Hudson River.

It is hard to conceive how any individual club's interests are inimical with other clubs devoted to the same purpose; and motor boat men have before them in the strong associations of sailing clubs and athletic clubs an example of the advantages to be gained by co-operation. Don't be afraid that your neighbor is going to get more than you are, but get together, put your backs to the oar and really do something worth while, instead of sitting back with the satisfied complacency of one of Boston's "first families."

The report of the Regatta Committee of the New York Yacht Club for 1912 has been issued, and makes very interesting reading for the followers of the racing windjammers. The lists of the winners of the various regattas have already been published at various times, but it is interesting to note that what has seemed

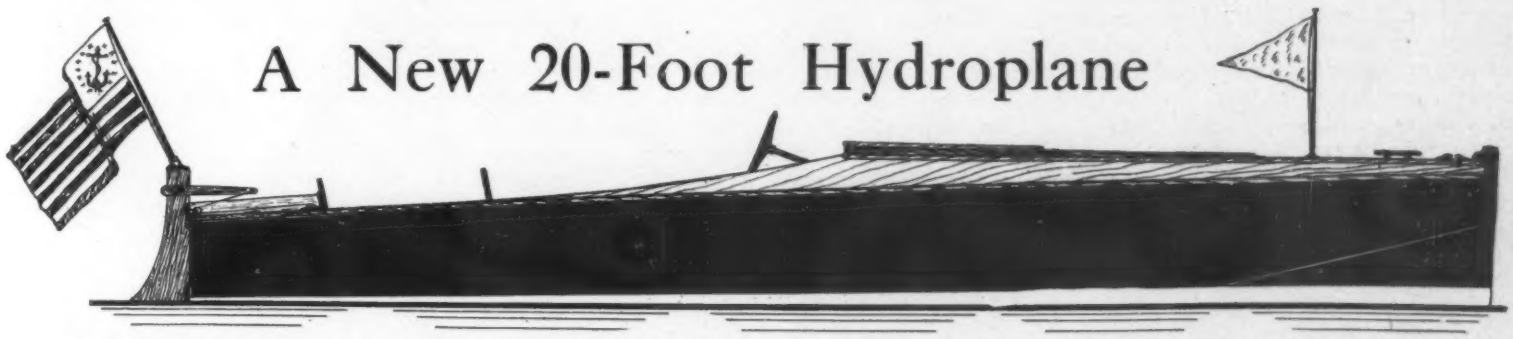


REMOH, MR. A. P. HOMER'S 1912 BOAT, USED AS A SCOUT CRUISER FOR THE BOSTON YACHT CLUB'S POWER BOAT FLEET

to be a decline in racing interest in this organization has been arrested, and that the number of entries in this year's regattas exceed those of last year, 267 yachts starting in 98 races, as against 238 in 97 races last year. This growth is largely due to the small yacht. The P class of 31-footers and the new Sound schooner class added materially to the total number of entries.

In the last issue of YACHTING, under the heading of "An Experiment That Succeeded," appeared an account of the successful development of a combination power and sailboat, the sails being auxiliary to the power. This article has aroused a great deal of interest, judging from the letters that have been received from readers, and seems to be evidence that this type of boat—a boat that is primarily a power boat, and yet one that can be sailed safely and comfortably when the wind favors—will fill a long-felt demand among power yachtsmen. It is strange that naval architects and builders have not devoted more thought to this type of craft.

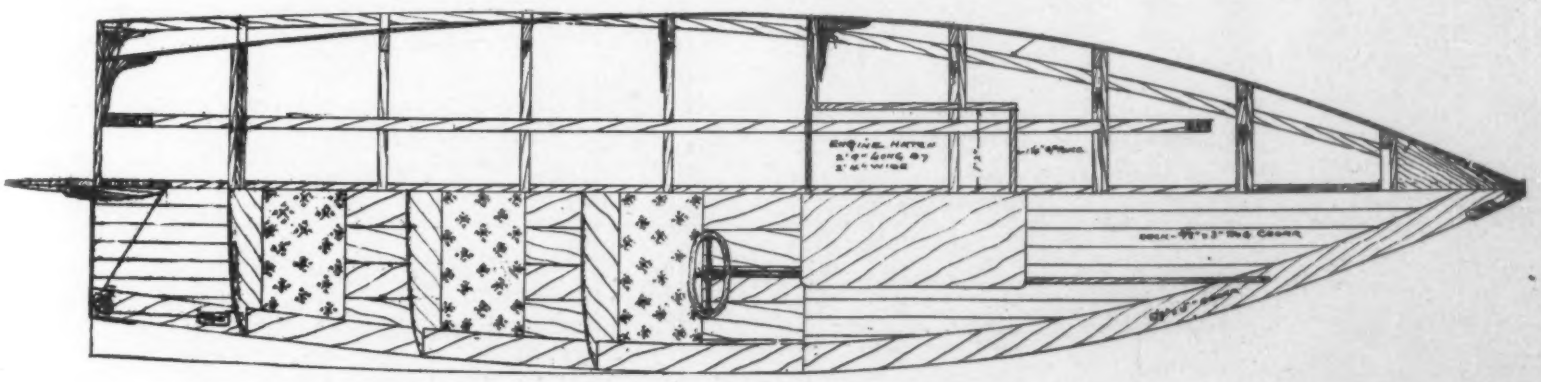
A New 20-Foot Hydroplane

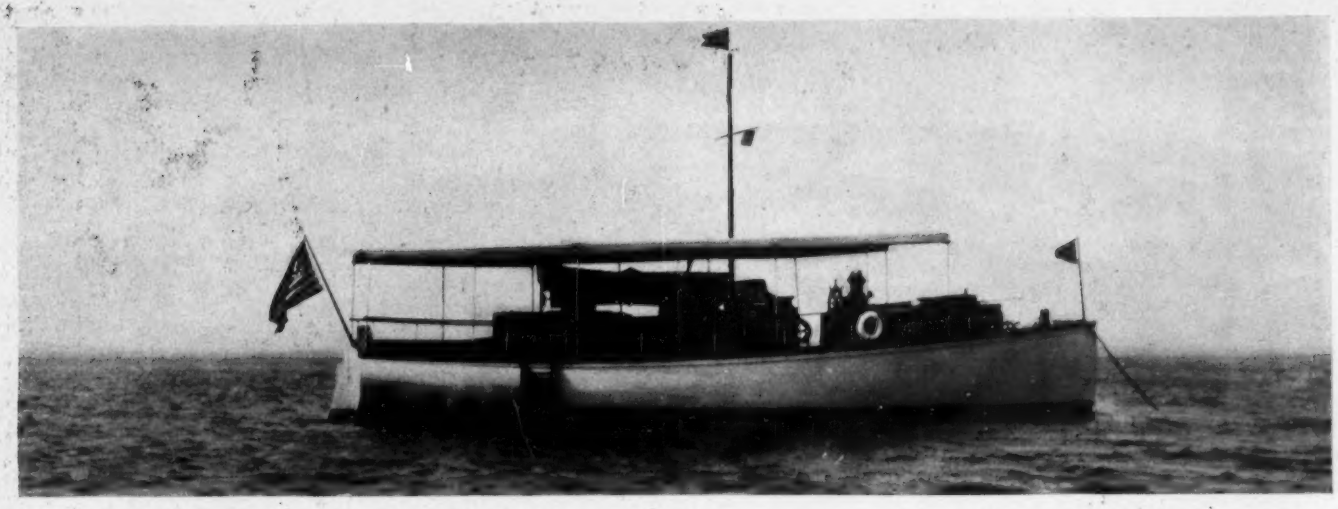


WE reproduce herewith outboard profile of a 20 x 5 foot hydroplane from the board of John A. Connolly, Jr., of Sheepshead Bay, New York, which is being built for Mr. Harvey S. Ford, of New York City, by Mr. Julius Petersen, of Nyack, N. Y.

This hydroplane is similar to the design which appeared in October YACHTING in a "How to Build" article by Mr. Connolly, and was designed for a fast all-around boat with motor installed forward of amidships, the hull being decked over to 10 feet aft of stem and the cockpit long enough to accommodate six persons. Mr. Ford intends placing his motor aft of amidships and running shaft forward to a differential gear and then aft under the motor to propeller. It is Mr. Ford's desire to get as high a speed as possible, and with this end in view he will give the boat a 90-horsepower, six-cylinder Van Blerck motor weighing about 1,000 pounds.

This boat will be raced next season as a displacement planer, as Mr. Ford wishes to get the best rating possible under the rules, and, therefore, will try her out without the step, since she is a single-step hydroplane. The principal dimensions are: Length over all, 20 feet; length of waterline, 19 feet 11½ inches; extreme beam, 5 feet; hull at rest at stem, 8 inches; at stern, 6 inches.

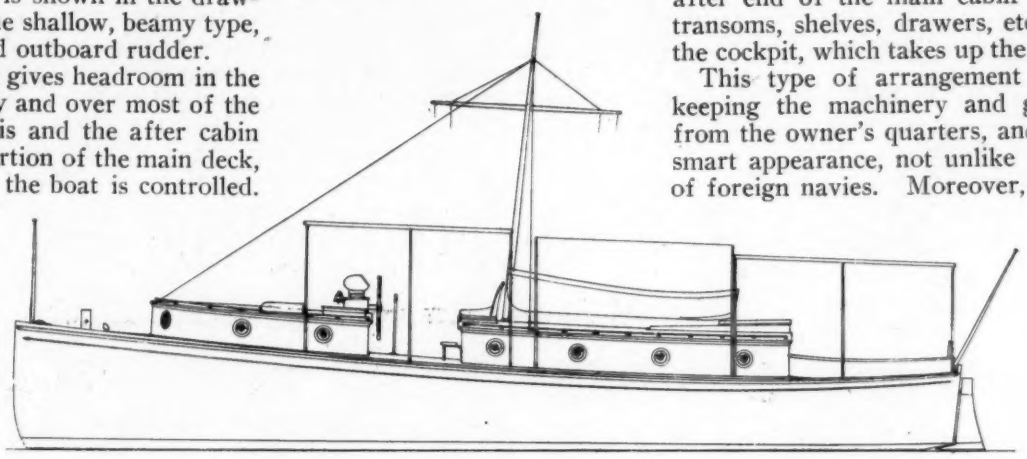




A 45-Foot Double-Cabin Launch

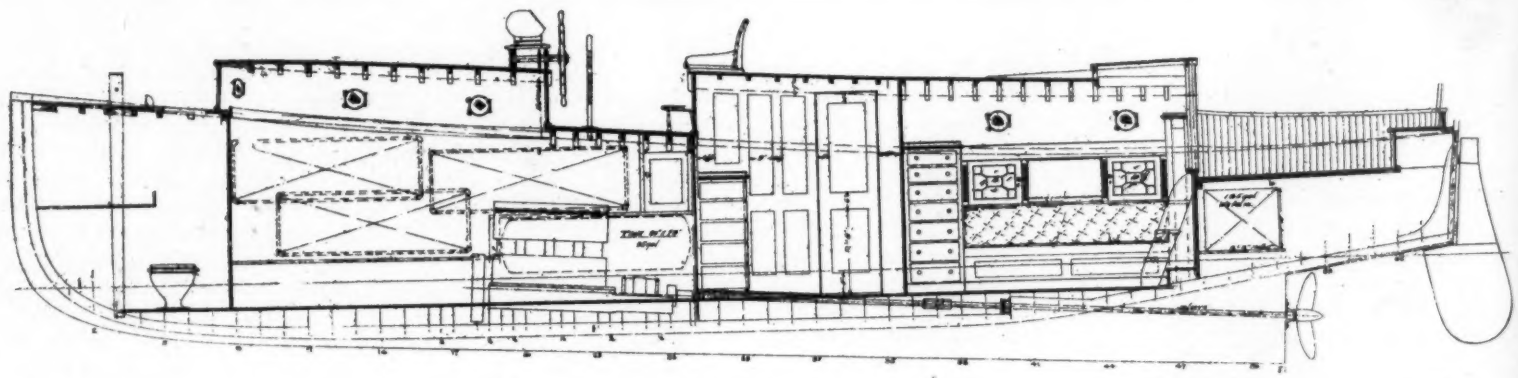
AN interesting example of the working out of the two-cabin idea in cruising power boats is shown below in the plans of a 45-footer designed by Morgan Barney, of 29 Broadway, New York city. The principal dimensions of this boat are: Length over all, 45 feet; waterline, 42 feet; beam, 12 feet; draft, 3 feet 3 inches. As is shown in the drawings, the boat is of the shallow, beamy type, with square stern and outboard rudder.

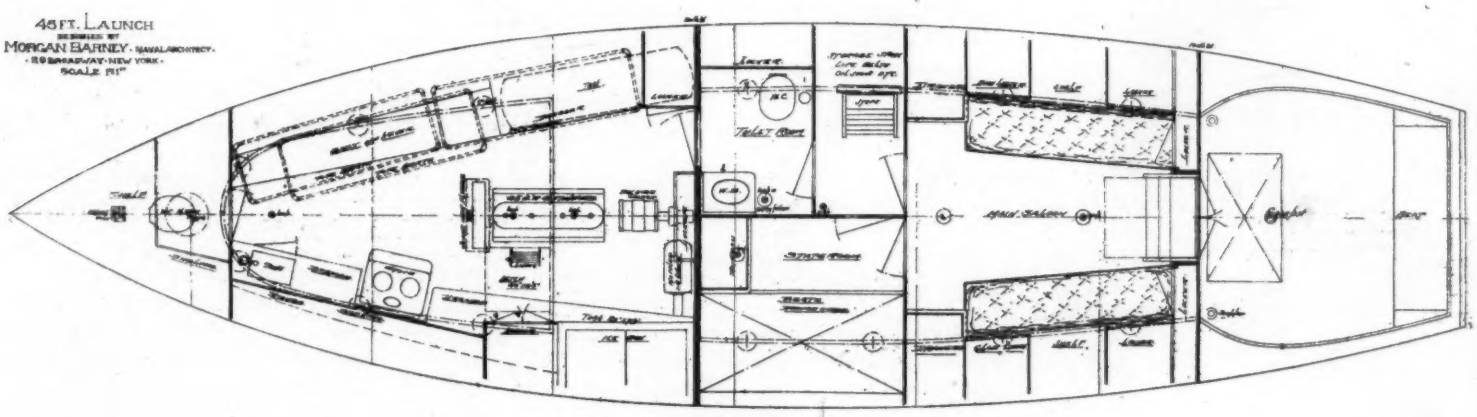
The forward cabin gives headroom in the crew space and galley and over most of the engine. Between this and the after cabin there is retained a portion of the main deck, from which position the boat is controlled. There are seven deck beams which tie the boat together at this point, greatly increasing its structural strength. An ice chest is built in under this bridge deck on the port side. The two portions of the boat communicate by means of a door between the engine room and toilet room on the starboard side. Abaft the latter is a corridor, with companionway, leading to the side deck, while the starboard side is occupied by the owner's stateroom, having a double berth. The after end of the main cabin is a saloon fitted with transoms, shelves, drawers, etc., and having access to the cockpit, which takes up the rest of the boat.

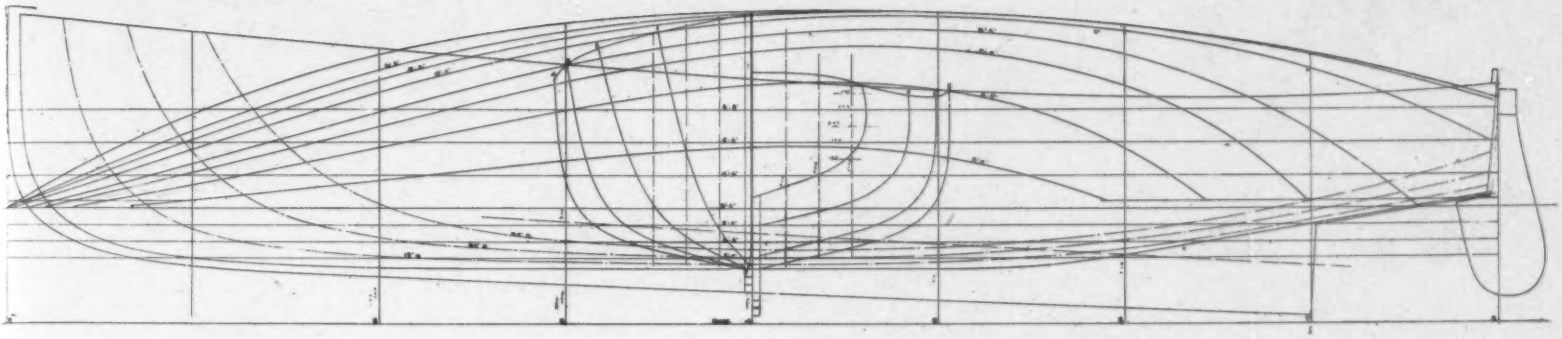


This type of arrangement has the advantage of keeping the machinery and galley entirely separate from the owner's quarters, and gives a boat of a very smart appearance, not unlike the captains' launches of foreign navies. Moreover, its construction is simple, strong and economical.

The cockpit is large enough to accommodate a number of chairs, and has a lazy-back seat at the after end of it. The rudder is hung out-



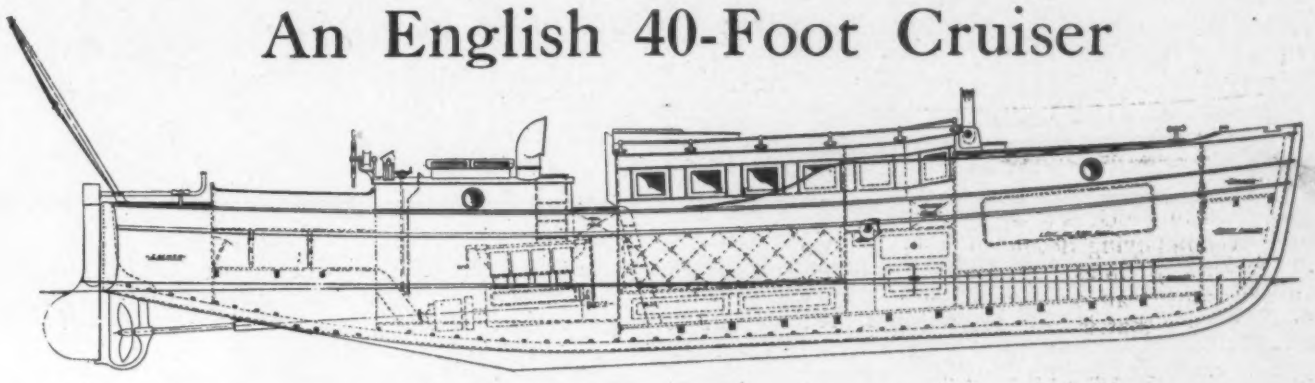




board on pintles, and steering is done by means of a ship's wheel on the bridge, from which tiller ropes run aft under the deck.

The engine is a 25 horsepower, four-cylinder. Cylindrical gasolene tanks are opposite engine on each side of engine room.

An English 40-Foot Cruiser



THE motor cruiser, drawings of which appear on this page, is from designs by Messrs. Simpson, Strickland & Co., Ltd., of Dartmouth, England, and presents some rather novel features. There are two separate cabins, as the plans show, for accommodations and engine room, respectively; but, contrary to the usual practice on this side, it is the after one which is used for the engine.

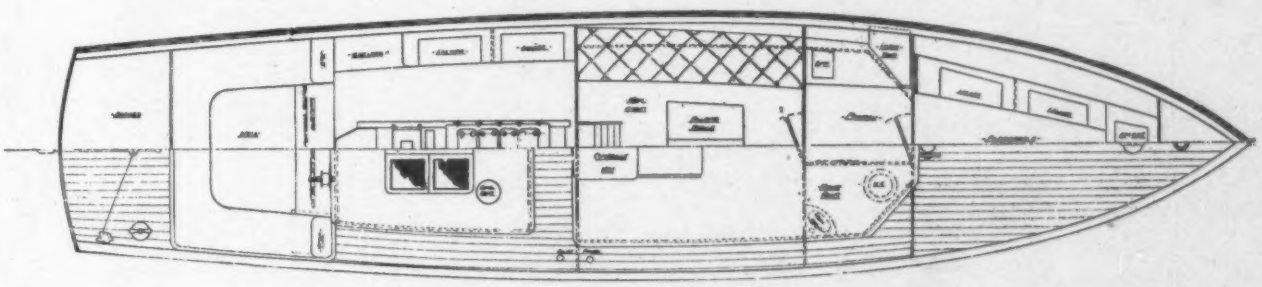
There is a narrow strip of deck between the two deck houses, from which the companionway leads down into the main cabin. The latter is fitted with 6-foot transoms along the sides and a table in the center. Forward of the main cabin, but still under the house, are the pantry and toilet, the former on the port, the latter on the starboard side. Forward, again, of these, and under the forward deck, come the crew's quarters.

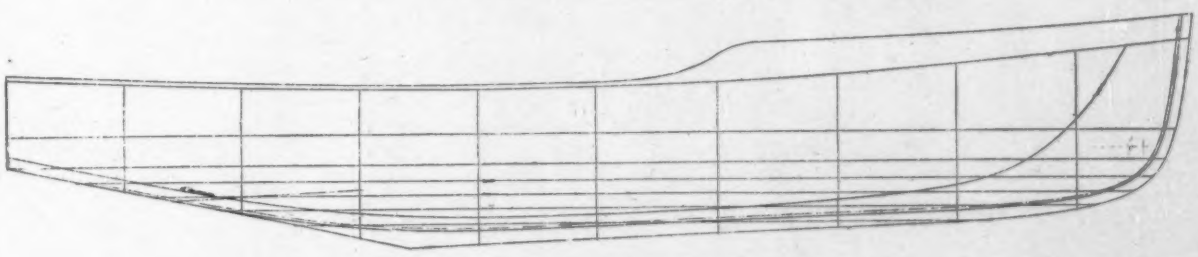
Aft of the engine room is a small cockpit, with the steering wheel and engine controls located at the forward end.

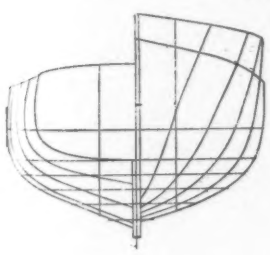
This arrangement is one which would be well worthy of study on this side of the water. The engine room communicates readily with the cockpit, so that the helmsman can keep his eye on the motor, which does away with the necessity of keeping an engineer constantly on duty. At the same time, all the engine smells are kept out of the living quarters.

The boat is intended for cruising on the English coast. The principal dimensions are: Length over all, 40 feet; beam, 9 feet; moulded depth, 4 feet 6 inches. The material used in construction is selected Oregon pine, with English elm garboard strakes, top strakes and transom. The stem has a slight rake, giving the boat what our English contemporary, "Motor Ship and Motor Boat," to whom we are indebted for the plans, calls "rather an American appearance."

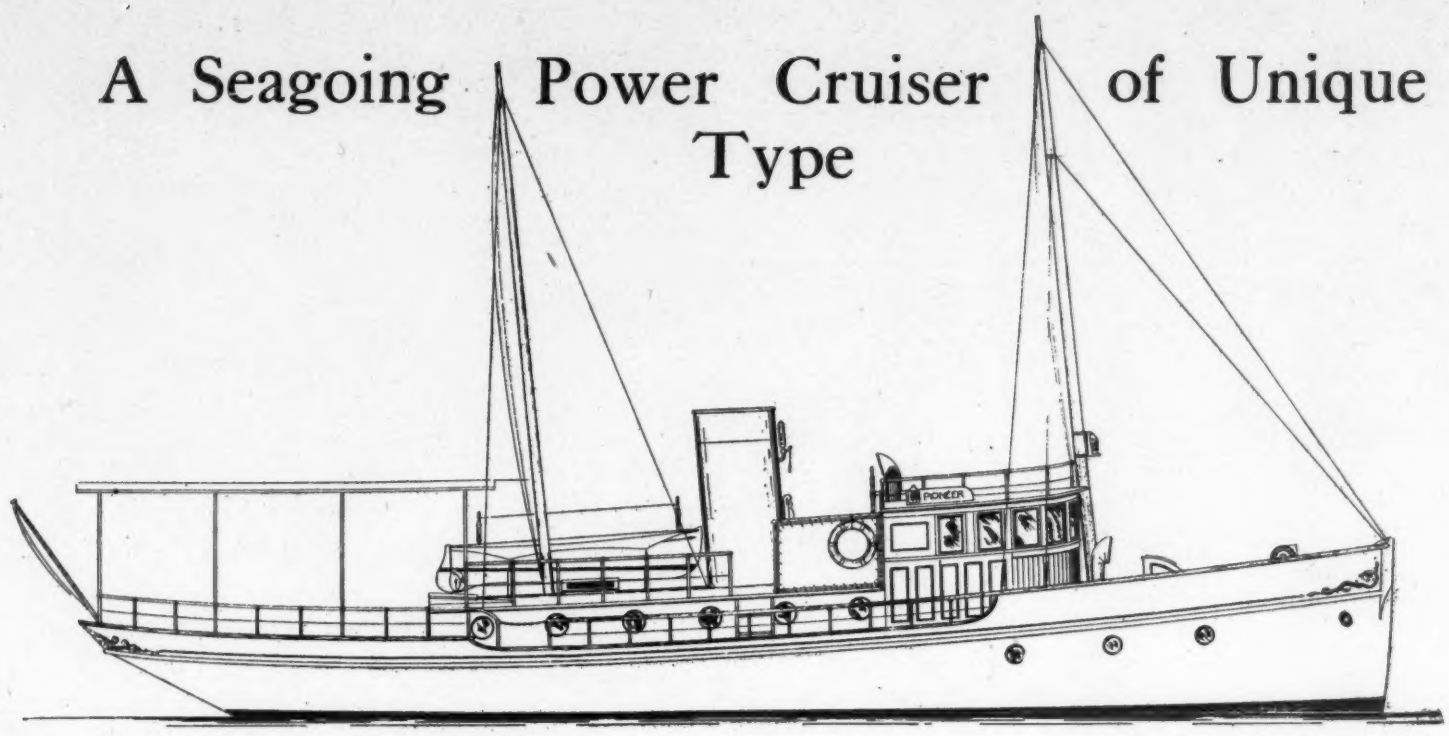
The lines show an easy entrance and smooth run. The whole appearance of the boat is decidedly businesslike and attractive, though the lack of deadwood or skeg is unusual in a cruising boat.







A Seagoing Power Cruiser of Unique Type

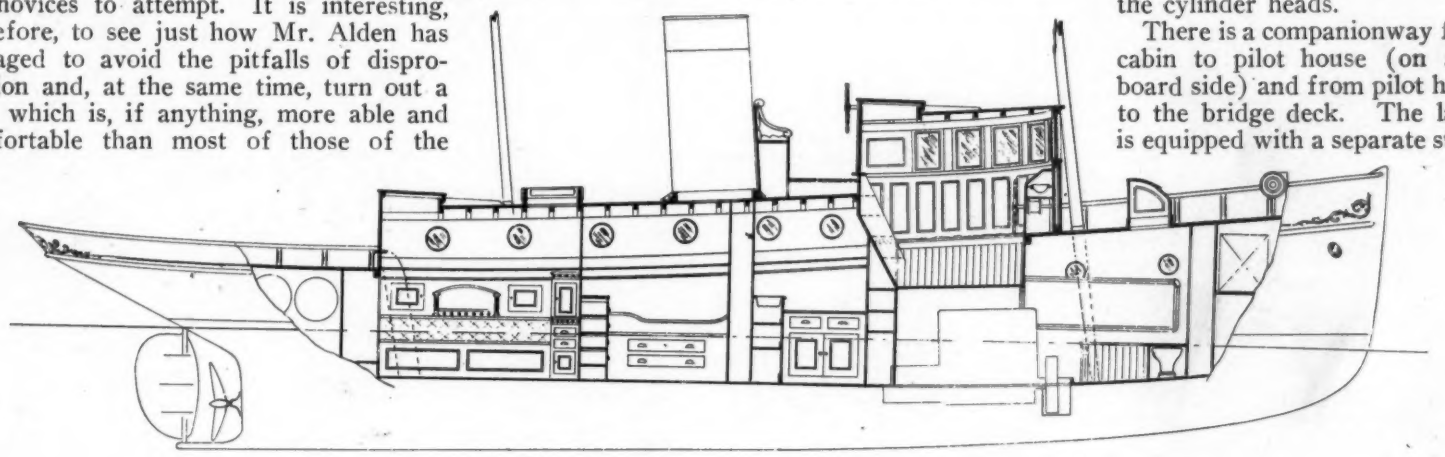


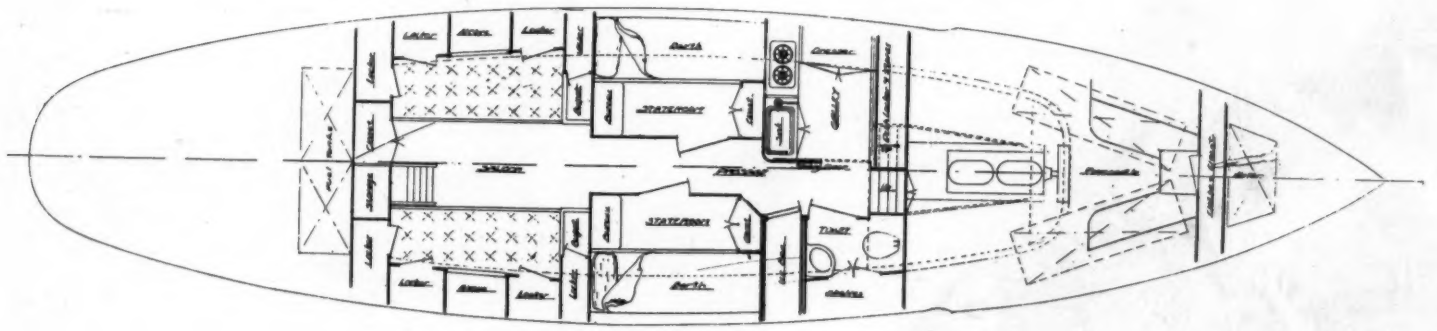
THE power yacht which is able, and looks the part, is shown in the accompanying design by John G. Alden, of Boston, Mass. In lines and appearance, she is like a reduced reproduction of an ocean-going tug, which is about the sturdiest type of craft that is propelled by machinery on any of the Seven Seas.

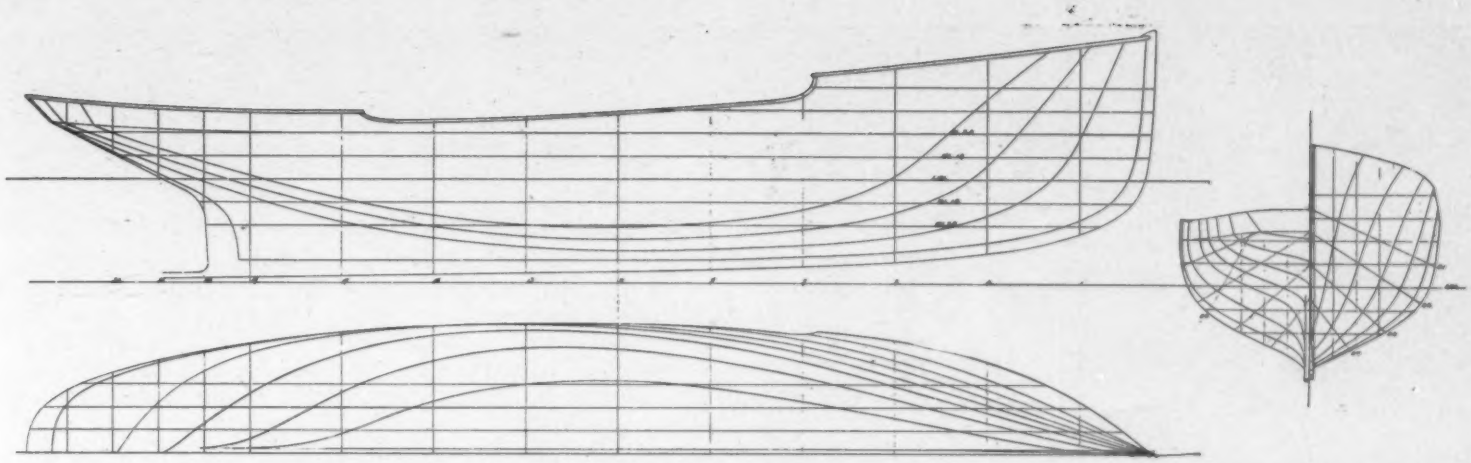
As a general rule, the attempt to build small boats after the pattern of big ones is not fraught with success. There is usually some one obstinate part of the ensemble—as, for instance, the pilot house—which (to be of any use) has to be retained in something like its original dimensions, thereby spoiling the symmetry of the design and giving the boat very much the appearance of little Tommy masquerading in "the gov'nor's" top hat. All of which only goes to prove that the experiment is not one for novices to attempt. It is interesting, therefore, to see just how Mr. Alden has managed to avoid the pitfalls of disproportion and, at the same time, turn out a boat which is, if anything, more able and comfortable than most of those of the orthodox type. The principal dimensions are: Length over all, 48 feet 6 inches; waterline, 42 feet 3 inches; beam, 11 feet 6 inches; draft, 4 feet 4 inches.

With the above overall length, a man-sized pilot house set up on deck would look like a chicken coop afloat, yet the usual objection to the sunken type is that it ruins the layout below. Here, then, is a problem to tax the designer's skill, and Mr. Alden has solved it in an ingenious manner, as follows: The interior of the pilot house is given wide transoms on both sides on the level of the deck; only the narrow standing room is sunk, and this occupies what would otherwise be useless space in the engine room directly over the motor. This scheme leaves a wide passageway with good headroom on each side of the motor, and there is plenty of clearance over the motor to get at spark plugs, etc., in the cylinder heads.

There is a companionway from cabin to pilot house (on starboard side) and from pilot house to the bridge deck. The latter is equipped with a separate steer-







ing gear, and will serve very well as a place from which to handle the boat in ordinary weather; but for steering on long runs in cold or stormy weather at sea it cannot be denied that some shelter house is a boon to the helmsman. The woodwork of the pilot house is brought up high and is very strongly constructed.

Forward of the engine is the crew's space, with its separate hatch on deck. Aft of the engine room are the owner's and guests' quarters. There is a toilet on the starboard side and a man-sized galley on the port. Then come two single staterooms with 6-foot berths, and aft of these is the saloon, which will sleep two people comfortably on the transoms.

Berths may also be made up on the pilot house transoms. There is a good-sized deck aft and a 20-inch passageway along each side of the house.

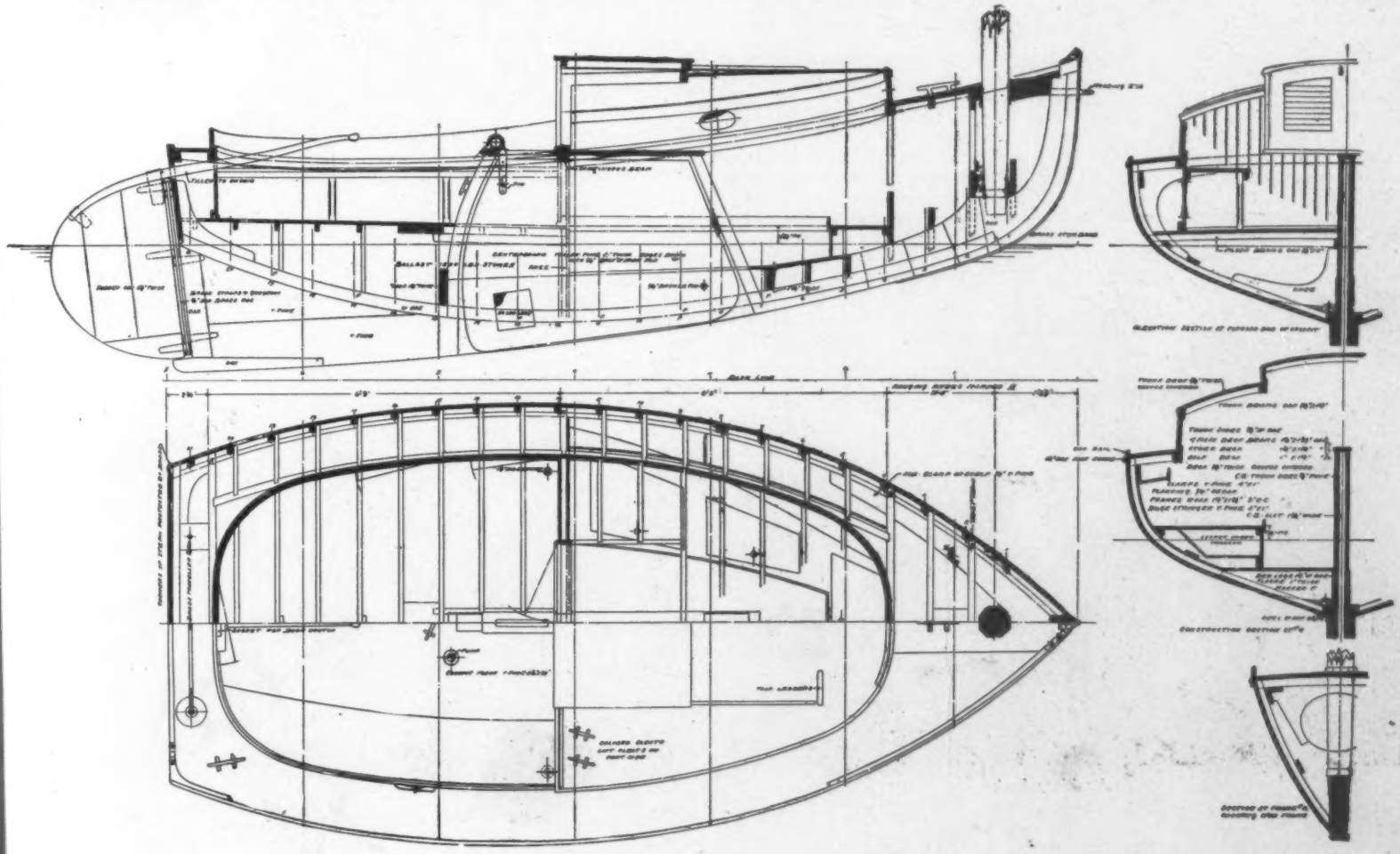
A 17-Foot Cape Cod Cat

THIS interesting little boat has been designed by Messrs. Swazey, Raymond & Page, of Boston, for use in the vicinity of Newport and on Narragansett Bay. She is a typical Cape Cod catboat reduced in size, and should be an unusually able sort of craft—easy to handle, and just the boat for a beginner to learn to sail in. As the plan shows, she has very generous beam, which will enable her to lug her high-peaked sail through a stiff breeze of wind.

The cockpit is watertight and self-bailing, and is large enough to sleep two people comfortably when a tent is rigged over the boom. Two more can be accommodated on the transoms in the cabin, so if one does not mind roughing it a bit this little boat will stow away more of a ship's complement than many a larger craft.

The Cape cat is pre-eminently a rough-weather boat, and the construction must be solid in proportion. This need is further increased by the fact of having all the strain of the mast applied so far forward. The mast, it will be seen, in this instance is stepped on the stem itself, and is further braced by a heavy clamp or breasthook which ties the forward end of the boat securely together. Further, rigidity of hull is gained by the web frame shown in the lower section and by substantial knees and stringers.

Principal dimensions are: Length over all, 17 feet; waterline length, 15 feet 5½ inches; beam, 8 feet 1¾ inches; draft (without centerboard), 2 feet 4 inches.



Mess Room Talk

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Factors of Power

NEW ORLEANS, LA.

Given a 50-foot cruiser, turning a three-bladed wheel, of 30 inches diameter, 40 degrees pitch, and assuming full efficiency for the engines, will any of the standard marine engines of the same bore and stroke and same number of cylinders give the boat approximately the same speed? If not, please explain why. P. S. B.

Although it is bore and stroke that have most to do with the power developed by a gasoline engine, there are certain refinements in design that must be taken into consideration. Size and location of the valves, the arrangement of the in-take and exhaust manifold, proportion of clearance above piston (compression), and weight of the moving parts and the speed at which they are designed to move, all affect the power that will be obtained from various gasoline engines of the same size.

An engine of high compression will develop more power than will one the compression of which is not so great. If properly designed and intended to run at the same speed, engines of the same cylinder dimensions should develop the same power. Inasmuch as the speed of the motor is determined by the load (when operating at full power), it is evident that the same size and pitch of wheel cannot be used for engines designed to run at different speeds.

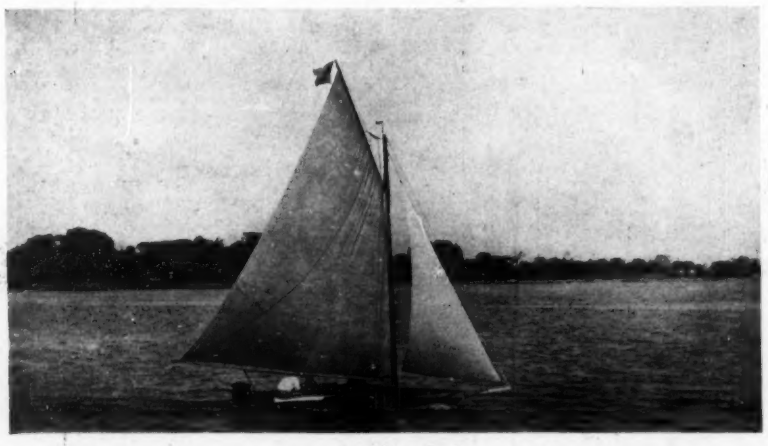
A high-speed engine will require a smaller wheel or one of less pitch, while a low-speed, heavy-duty motor will need a propeller of greater diameter or pitch—or both—in order to operate the most efficiently.

Reply to C. K. G.'s Inquiry Concerning Auxiliary Lark

Reading your inquiry in a late issue of YACHTING, as to placing an engine in a model lark, I have thought you may be interested in hearing of one installed for several years, and it is, so far as I am aware, the only one so equipped. My lark, as you will see by photo, has now a sloop rig, which I like better than a single sail.

The boat is rather heavily constructed, ⅞-inch spruce bottom, canvas-covered deck and iron centerboard. Cockpit and engine are well aft; a V-shaped hood, about 14 inches high, covers the forward part of cockpit. This is a feature I found necessary in order to enjoy sailing in rough water. The engine is only 1½ horsepower; weight about 65 pounds. To install this engine it was necessary to shorten the board a little and cut out the afterpart of the trunk. This little "kicker" gets me home when wind fails or is too light with tide against me. It often takes me out of a slip or anchorage into open water when it would be impossible to sail out. The gasoline is away aft in a 5-gallon copper tank, boxed over, which at times makes a serviceable seat. The muffler is just aft the cockpit on deck. My mainsail has 237 square feet and jib 63 feet. Seldom have occasion to reef.

You may find a six (6) horsepower engine rather large for a light flat-bottom boat of the size you have in mind. However, a suitable engine, about 3 or 4 horsepower, will be a very desirable acquisition. Would suggest rigid construction and that you keep weight well aft, as in sailing in a strong wind the larks are inclined to slide under water if bow is not held up. E. J. W.



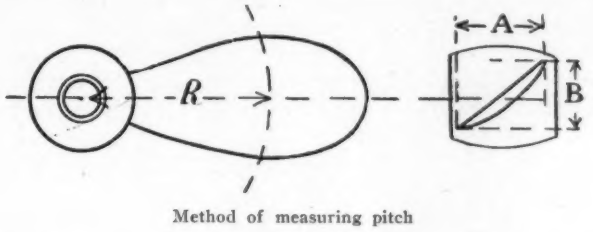
Auxiliary Lark

Formula for Propeller Pitch

NEW HAVEN, CONN.

Will you be so good as to give the formula for the pitch of marine propellers, and an explanation of the derivation of same, through the columns of your "Mess Room Talk" department? J. R. C.

The formula requested is: Pitch $= \pi\ 2/3\ D \times$ Tan. A, where D is the diameter of the propeller and A the average angle of pitch of a blade. Two-thirds of the maximum diameter ($2/3\ D$, above) is used because the pitch of a blade at a point two-thirds of the distance from the shaft to periphery is approximately the mean of that for the whole blade. The



Method of measuring pitch

angle of pitch is the angle made by the intersection of a blade at this point with a plane drawn at right angles to the shaft line. The tangent of this angle would be A/B. Writing this for its equivalent, Tan. A, in the above formula, we get the expression: $P = \frac{2\pi D \times A}{3B}$.

This may be still further simplified by using instead of the diameter (D), a value R (see figure), which is equal to $1/3\ D$.

The formula then becomes: Pitch $= \frac{2\pi R \times A}{B}$, which is its form most convenient for practical work.

Roller Reefing Gear

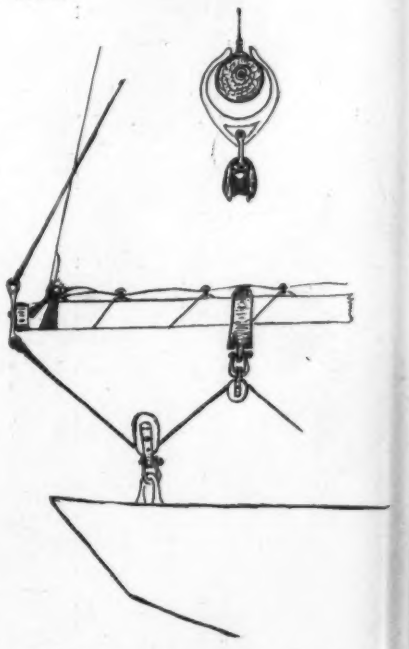
NEW YORK CITY.

I have seen a statment somewhere to the effect that some pilot cutters in the English Channel are equipped with roller reefing gear which makes it very easy for them to reef in a hurry.

Would you be so kind as to publish a description of this device, and also state what disadvantages it has, if any, and whether you would recommend it for cruising sloops from 35 to 40 feet? E. W. S.

The roller reefing gear has been taken up more eagerly on the other side than here, and is used on fair-sized fishing vessels and on the pilot boats mentioned above.

With this arrangement reefing becomes a relatively simple matter, since all that is necessary is to slack away the halyards and wind the sail in on the boom—like rolling up a window shade. Its disadvantages are that it necessitates quite a bit of cumbersome machinery, makes a wide space be-



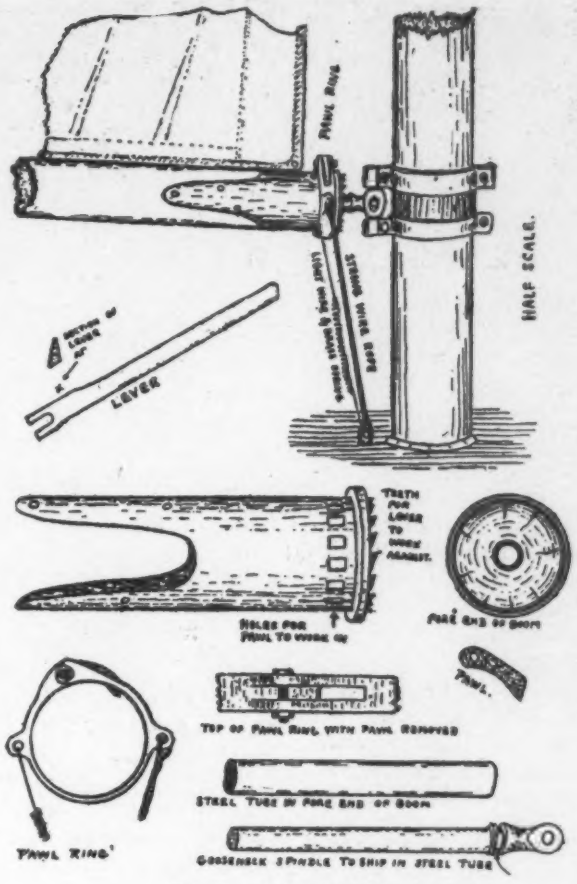
Outboard arrangement of roller reefing gear

tween mast and sail, and that a sail so reefed rarely sets well. The greatest disadvantage, however, lies in the fact that it is necessary either to have the main sheet made fast only to a swivel at the extreme end of the boom, thereby subjecting the latter to a great strain, or else, if an inner mainsheet block be employed, to have this carried by a rider on the main boom (see cut), the lips of which rider will bear on the sail and have a tendency to chafe it when it is wound around the boom.

The design of the forward end of the boom is shown below. A pawl ring, which is prevented from turning by a stout wire rope to an eyebolt in the deck, fits over a drum on the forward end of the boom, the pawl engaging in ratchet holes in the latter. The boom is revolved by means of a lever made with a fork to ship on a groove in the gooseneck spindle, the shank of the lever engaging in teeth on the forward face of the drum. In the cut shown herewith the operator stands on *this* side of the boom and heaves *down* on the lever. The pawl ring is kept from rotating with the drum in this case by means of a spring tension.

The fact that the foot of sail is shown lashed to boom in one of the drawings and not in the other is to be explained on the grounds that the two drawings are taken from different authorities.

Undoubtedly it requires less skill and labor to reef a sail with this arrangement than by the standard method. On the other hand, the result is not so satisfactory and the gear is cumbersome. It seems rather out of place on a yacht—at any rate on a small one, where a couple of good, able men should find no difficulty in tieing in a reef in a few minutes' time.



Details of roller reefing gear

Drag of Screw, Etc.

EASTPORT, N. Y.

Am thinking of installing an engine in 30-foot yawl, and as a sailboat man I want to know how the screw affects the steering of a sailboat, and just how much the drag of the propeller amounts to. These are fundamental questions which seem to be avoided by the writers on auxiliaries. I have seen it stated in print that all vessels with a screw carry a lee helm. Surely this cannot be true. An old fisherman tells me the drag of the propeller absolutely prevents a sailboat doing anything close-hauled. This statement seems very doubtful, too.

Is there any kerosene engine of suitable weight to be installed in a small boat?

Is copper paint considered a sufficient protection against teredo on a Southern trip? Should it be applied directly to the wood? What paint do you recommend? L. W. R.

1. While it is true that a propeller and the propeller aperture that may be cut in the deadwood of a sailboat where auxiliary power is installed, do have some effect on the sailing qualities, they are not sufficient to overcome the many advantages gained. The drag of a propeller is appreciable, but if a two-bladed wheel is used usually enough protection is afforded by the deadwood to minimize this. There are, also, feathering propellers now on the market which give an absolute neutral on the blade, and where the drag is very little. The propeller aperture need not be large enough to have much effect on the sailing qualities of the boat. On a racing boat this might be noticeable in going to windward, but in a cruising boat, unless the aperture were much larger than necessary, it would not appreciably affect the sailing qualities.

2. All vessels with an aperture cut away for propeller do not carry a lee helm. If the aperture is very large they might possibly do so, but what is more likely is that if the propeller is set off center, as is sometimes the case, with the shaft coming out of the garboard, the drag of the wheel on one tack might cause the boat to carry a lee helm on that tack. I think that the fisherman who prejudiced you against the motor had had very limited experience with a boat of this type, and has not handled a boat where the engine was properly installed.

3. There are a number of kerosene engines on the market; most of them are heavy, although there are a number of kerosene-burning attachments for gasoline engines, or engines that can burn either kerosene or gasolene, which are suitable for auxiliary purposes.

4. Copper paint is a good protection against the teredo in Southern waters when it is first applied. It loses, however, its effective qualities rather quickly, and should be renewed every month or two.

Carrying Tide With a Boat

An acquaintance says that while cruising in his 40-foot motor boat last summer he entered Long Island Sound at the Race with the first of the flood tide and carried it with him all the way to Larchmont. Is this possible? M. O.

Your friend is probably telling the truth. Look up the difference between the time of high water at the Race and at Larchmont, add six hours to that for the rise of the tide, and you will see that if he averaged 10 knots he could just about make it.

? ? ?

Chicago Yachtsmen Busy

The winning of the Manhasset Bay Challenge Cup and the losing of the Yacht Racing Union Cup by the Chicago yachtsmen last year have had a very stimulating effect upon yacht racing at the head of Lake Michigan. The Chicago Yacht Club is anticipating a challenge and race for the Manhasset Bay Cup, and is busy collecting a fleet of 31-raters. The club has information that at least three new boats are being built on the Atlantic coast and in Canada to come after the cup, and they are not to be caught napping. With Michicago and Mavourneen already in the club fleet, they are now after a number of other fast Eastern 31-footers, and with the boost given by these boats the fleet inside the Chicago breakwater should increase rapidly with more modern craft than it has had in the past. At this writing no definite challenge has been received for the Manhasset Bay Cup from any Atlantic coast yacht club.

The annual long-distance cruising race has again bobbed up for consideration, like the proverbial bad quarter. The course to Harbor Springs, which was chosen last year, did not entirely meet the approval of the members, and it was not supported, as it should have been. This, with the fact that a gale scattered the fleet before it reached its destination, added to the disappointment with Harbor Springs as a port at which to finish the long-distance race. So the annual classic will again be tinkered with. Several schemes embodying radical changes have been suggested, but nothing definite has yet been decided on.

The Ideal Small Power Cruiser

Following in the series of the ideal types of small boats which is being written for YACHTING by some of the well-known American naval architects we will present in the February number The Ideal Small Power Cruiser. This will be a boat under 40 feet long that can be handled by two men, without the assistance of a paid hand, which will be designed with special reference to her seagoing qualities and to securing the maximum amount of accommodation below. This boat, as with all others in the series, is being designed especially for YACHTING, with a view to educating boat owners as to what elements go into the successful, seaworthy small boat. If you are a "power-boater," don't fail to see this.

For a Resumption of Racing with England

It looks now as if 1914 will see racing relations with England renewed, whether or not an America's Cup race is held that year. Since the establishment of international racing with Germany in small boats of the sonder class efforts have been made to bring about racing between England and America on the same basis, though with somewhat larger boats. This has always been difficult, owing to the fact that English yachtsmen have seemed to feel that, since we do not subscribe to their International Rating Rule, we were not eligible as competitors. Every step towards promoting a race between the two countries has been met with the objection that our boats could not race under the International Rule, forgetting that it was possible to bring about yachting relations in a special class, and that it would be easy to bring teams together on this basis if the boats were not too large.

Plans are now being made to send three American boats to British waters for a series of contests held under the international yacht racing rating. It is said that the boats will be about 8 metres racing length, or what corresponds to about our Q class. They will, of course, have to be built especially for the event, in order to comply with the requirements of the British rule. Racing such as this, with a team of small boats, is of far greater interest to yachtsmen and of much greater value to the sport than an America's Cup race.

The Increased Cost of Gasolene

In this issue is an article on the price of gasolene, which deals with a vital question to the motor user and will bear careful thought, as the increased cost of operation is an item that means much to the average owner of power boats, whether used commercially or for pleasure. An impartial analysis of the article, which was written from data furnished by men in a position to know, tends to show that, while a legitimate increase may be expected on account of the increased demand, this fact alone hardly warrants the present price, as compared with the price of a year ago. It is significant that when competition had to be met the price was what may be considered a normal one.

Be that as it may, with the growing use of automobiles and internal-combustion motors for marine purposes manufacturers and boat users will have to face growing prices. The present tendency of manufacturers to adapt their motors and carburetors to the use of kerosene and fuel of lower specific gravity is an encouraging sign, and it is probable that within a few years we will see a large increase in the number of engines placed on the market that will operate equally well on either type of fuel. As yet the Diesel has not been perfected for use in small powers, though experiments are being made in that quarter that justify the belief that more attention will be paid to this type of motor for pleasure purposes.

There is no reason to fear that the increasing price will mitigate against the use of internal-combustion motors, as engine designers and manufacturers are sure to find a way out of the difficulty if the price of gasolene becomes prohibitive.

More America's Cup Talk

There has been a great deal of talk in yachting circles recently over the advent of a possible new challenger for the America's Cup in 1914. A prominent British yachtsman, Mr. Charles C. Allom, the owner of the racing cutter Istria, has been in this country recently, and has sounded New York Yacht Club members as to the chances for getting a race under conditions that would be acceptable to English yachtsmen. It is said that he represents a syndicate that stands ready to build a British yacht to challenge for the Cup, provided—and here the same "if" comes in—certain changes are made in the deed, the changes being very much the same as those advocated by Sir Thomas Lipton, who, by the way, has promised to send a 23-metre cutter to San Francisco to race there at the regatta in connection with the Panama-Pacific Exposition. As yet nothing has crystallized in the matter.

Don't Forget that the February Issue is the Boston Show Number

(*Photo by Levick, N Y.*)

Of *course* it's varnished with

VALENTINE'S
VALSPAR
"The Varnish That Won't Turn White"

The owner says:

"You are, of course, aware of the fact that Peter Pan V won the International Championship in the Hudson River Carnival at Yonkers, also the thirty-mile free-for-all in said Carnival. This boat was varnished with 'Valspar.' We have heretofore seen fit to recommend your 'Valspar.' We use it exclusively on all our high-speed boats with perfect satisfaction."

Yours very truly,
RELIANCE MOTOR BOAT COMPANY,
(Signed) LEO B. HAYES, Secretary.

Water at high speed is about as hard as asphalt and a bit wearing on the varnish, so owners of racing boats use the toughest varnish made—Valspar.

The alternate wetting and drying of the free-board and the decks would cause ordinary varnish to turn a lustreless white and "perish," requiring frequent renewal. Valspar is absolutely unaffected by water.

The leading boats are "Valsparred" nowadays. Peter Pan V, illustrated above, is merely a typical instance.

Samples of Valspar will be sent free for testing purposes upon request

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Driftwood from Alongshore

NEW ROCHELLE YACHT CLUB

Tacoma Y. C. to Hold Regatta New Year's Day

The Tacoma Yacht Club is rapidly taking its place as one of the foremost yachting clubs in the Northwest, and so much interest is being taken in it that its members have decided to have a permanent up-town headquarters as well as the club house on the water front. Invitations will be sent out for the coming regatta on New Year's Day, 1913, to all the yacht clubs of the Northwest, which will be urged to send their best craft and members to participate. The local club is the only organization in the entire Northwest which has made a practice of holding a mid-winter regatta, and the only organization where conditions are ideal for such an event.

The officers elected recently for the ensuing year and the committees appointed by Commodore Perkins are as follows:

Officers—S. A. Perkins, commodore; C. E. Hogberg, vice-commodore; Dr. A. H. Coe, rear commodore; F. H. Sweetland, secretary; H. T. Engoe, treasurer.

Appointed Officers—F. S. Blattner, judge advocate; A. N. Walstad, measurer; F. F. Hammond, fleet captain; Capt. H. F. Andrews, port captain; Dr. C. E. Janes, fleet surgeon; W. H. Crump, librarian.

A Dixie, Jr., for Racing in Australia

Early in December the steamer Uhnfels sailed from New York for Australia, having in her hold an American-built and engined racing hydroplane, which has been sold by the firm of Tams, Lemoine & Crane, New York, through the exporting firm of Bowring & Co. to Mr. J. Herbert Syme, the well-known Australian sportsman and editor-owner of the *Melbourne Age*. This is something of a feather in the cap of American naval architects and builders, as, being an English colony, Australia has a high preferential duty.

Mr. Syme, after considering thoroughly the purchase of a fast boat, decided on one of the well-known Dixie, Jr., type of hydroplanes. These little boats were designed by Tams, Lemoine & Crane, are equipped with Sterling motors, and proved their speed capabilities last summer in the various racing events in which they competed. The boat is 20 feet long and has a six-cylinder motor rated at 65 horsepower. She was built by the Staten Island Shipbuilding Company, who built the Ankle Deep, Dixie IV, and other well-known racing boats from Mr. Crane's design.

It is only a few years ago that the Vingt-et-un was considered a marvel of speed when she made 21 miles an hour. Last summer a sister boat of Mr. Syme's made 43 miles an hour. The P. D. Q. II, another one of the Dixie, Jr.'s, on the the St. Lawrence, last August won the Gold Cup Challenge Race, averaging over 38 miles an hour over the entire course of 30 miles, beating such well-known boats as Baby Reliance, Mit and a host of others, all of her competitors having practically double her power.

It being spring now in Australia, Mr. Syme will have plenty of opportunity to race the boat on her arrival, and it will be interesting to see how she fares against the foreign-built boats which will compete against her.

These boats are the result of many years' experience gained by her designers in building light, high-speed racing craft, beginning with the Vingt-et-un, the first real speed boat built in this country.

The Ankle Deep, which was the first boat selected to represent this country in the international races in Huntington last summer, was given a trial December 7 over the official New York Yacht Club measured mile at Glen Cove, where, under adverse conditions, she developed a speed in excess of 51 miles an hour. This boat was designed, built and engined by the same firms who produced the Dixie, Jr. She is to be shipped south for racing in Florida this winter, where it is predicted that she will not have much trouble in showing her heels to her competitors.

Messrs. Tams, Lemoine & Crane expect to ship another hydroplane, larger and more heavily powered, to Sydney, N. S. W., in a short time, and it is certain these two representatives of American motor boats will give a good account of themselves.

Annual Meeting of Indian Harbor Y. C.

At the annual meeting of the members of the Indian Harbor Yacht Club, held at the club house, Greenwich, Conn., December 12, the following were elected as officers, directors and members of regatta committee:

Commodore, William H. Childs; vice-commodore, Lorenzo D. Armstrong; rear commodore, A. Gardner Cooper; secretary, Walter A. Hughes; treasurer, Richard Outwater; measurer, Morgan Barney; president of the corporation, Charles T. Wills; directors (term expiring 1915), Charles T. Wills, John D. Chapman; regatta committee, E. Burton Hart, chairman; Henry C. Pelton, Abbott P. Brush.

Power Boating Holds the Interest of Rochester Y. C.

For the third time W. P. Pembroke has been elected commodore of the Rochester Yacht Club. The other officers elected for the ensuing year are as follows: Vice-commodore, Fred. A. Mabbett; fleet captain, F. E. Bickford; treasurer, George V. Fleckenstein; secretary, P. E. Fellows; corresponding secretary, Clute E. Noxon; fleet surgeon, Dr. W. F. Plumley; measurer, C. J. Pembroke; directors for one year, Thomas B. Pritchard, George R. Newell and Lorenzo G. Mabbett; directors for two years, William H. Briggs, Frank E. Woodworth and A. R. Gorsline; delegates to L. Y. R. A., Thomas B. Pritchard, L. G. Mabbett and Charles Van Voorhis; alternates, John Taylor, Wilson A. Cross and Eric Moore.

Power boating at present interests the greater share of the club's members, and there is plenty of talk about new power boat racing, considerably more than about sailing races. All members are united in making the coming season a successful one. The club is almost free from debt.

Officers of the Metropolitan Yacht Club

At the annual election of the Metropolitan Yacht Club, held on December 11, the following officers were elected for 1913: Commodore, George Chadwick; vice-commodore, R. Spittel; rear commodore, R. Kaufer; treasurer, George Oakes; house committee, Jack Gallagher; regatta committee, George Harrison; secretary, Jack Lavery; entertainment committee, Joseph Keilts; fleet captain, Thomas Deckert.

The annual dinner of the club, on going out of commission, was held on November 10 at the Colonial Inn, Pelham Bay Park. Prominent among the invited guests were Commodore W. E. Strong, president of the Waterway League; Commodore W. J. Moran, of the Jamaica Bay Yacht Club; Commodore W. Hogg, of the Stuyvesant Yacht Club; Commodore De Lavante, of the Morris Yacht Club, and Commodore E. Kaufer, of the City Island Yacht Club.

Commodore Chadwick, of the Metropolitan, presented the cups to the owners of those boats that won the races in the 1912 regatta, and the affair was declared a most enjoyable one by all who were present.

This Invention Marks a New Epoch in Power Boating!

THE MAXIM SILENCER for Motor Boats

It Works on a Boat Like it works on a Gun

The Maxim Motor Boat Silencer effectively stops the noise of an above-water exhaust and is absolutely without back pressure. It actually improves the engine action and increases mileage per gallon of gasoline. Simple, compact and cannot clog with soot, dirt or grease.

The same principle which made the Maxim Gun Silencer world-famous is now successfully applied to motor boats. No more nerve-racking, popping noise. You can glide through the water smoothly and quietly. By doing away with the exhaust noise—the most discomforting feature of motor boating — you double your pleasure.

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The Maxim Motor Boat Silencer is easily attached. Made in all sizes. Any boat, engine builder or hardware dealer can get it for you, or we'll ship direct if you cannot obtain it in your town.

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Mention bore, stroke, and size of exhaust outlet when you write.

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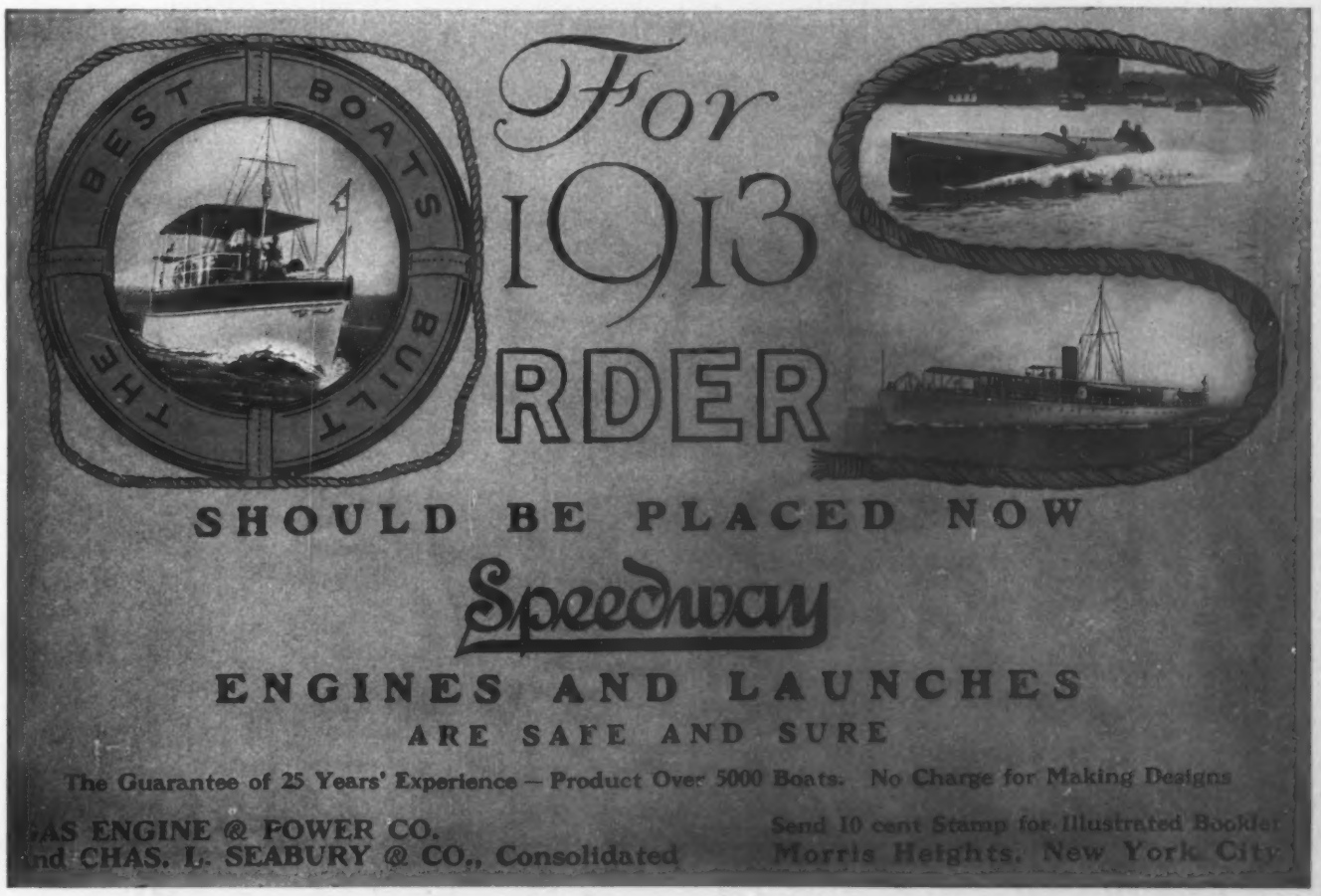
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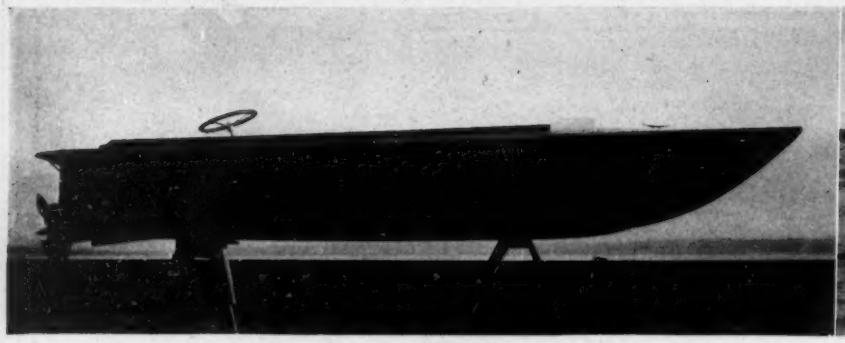
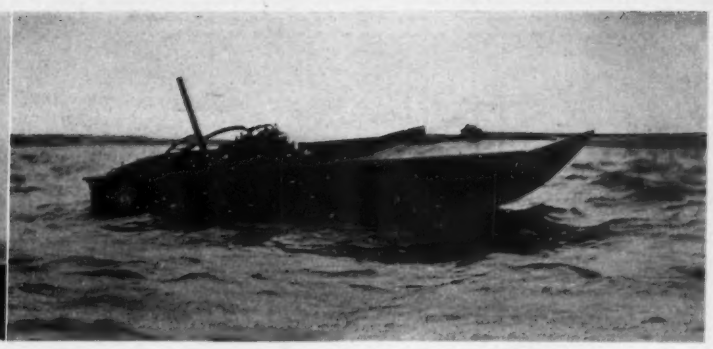


Viper V., with surface propellers and side-plate rudders



Viper V., with 20-h.p. engine installed, at moorings in a seaway

Viper V or Sea-Sled—A New Type of Plane

Everyone interested in motor boating is familiar with the little boats designated as Vipers, designs of which were conceived by Mr. Albert Hickman, of the Viper Company, of Pictou, N. S. They have created much interest on account of the speed at which they can be driven with low power. Mr. Hickman has recently designed and tried out another type of boat that embodies a number of new ideas, and which from the photographs appears to be well adapted for small boats and for use in rough water. The pictures of this boat, which he calls the Sea Sled, are so interesting that we are reproducing several showing the boat in different positions, that should set our "speed bug" readers to thinking. The boat uses a surface propeller. It is said that she not only planes easily at a much greater weight per horsepower than most planes, but is particularly good in rough water.

We have not been able to see the boat to pass judgment on it personally, but Mr. Hickman has this to say in regard to what he claims for the design:

"Viper V was the outcome of experiments which began with the fitting of brass air plates to the bottom of Viper II. The three main ideas in the design of Viper V were: First, to produce a boat that would plane readily and perfectly at comparatively heavy weights; second, to do away with pounding in ordinary choppy water, and, third, to attain as near to absolute safety and seaworthiness as it is possible. The boatman knows that one of the characteristics of the general accepted type of hydroplane when running is that great quantities of spray are thrown out from underneath the hull at the sides, but it does not seem to have occurred to him as worth practical consideration that this spray is water, mixed with air, and that water requires power to drive it. Some hydroplanes of very moderate power throw enough water to put out a fair-sized fire. If this water were thrown by a fire engine it would assuredly take power to drive it. The question is, would it not be better for the boat, whose first business is to get out on the surface, to gather this water in and sit on it, instead of throwing it out at the sides? Then she would be using all her waste effort in getting up.

"This is the basic idea under the design of Viper V. She was designed to gather in the spray, the mixture of air and water that is thrown from under the bottom of a speed boat, and her bottom so worked out that each little ripple as it went aft should act as an air compressor, forcing the trapped air under the boat, so that she actually rides in part on compressed air. This accounts for the enormous lifting effect given by the small power in the heavy hull, tests showing that she will plane at as high a weight as 88 pounds per horsepower, which enables this little craft of ordinary weight to plane more perfectly than any hydroplane of 200 to 300 horsepower.

"To accomplish this the bottom of Viper V was made with inverted V sections, something like a V-bottom boat turned wrong-side out. (This can be seen in the bow of the boat at anchor.) The keel line is higher than the chine throughout, curving downward aft in a way that would be quite incorrect in a hydroplane of the regular flat or V-section type. But the conditions when air is being forced under the hull differ widely from those when it is being forced out.

"Any prejudice that may exist in the mind of the boatman concerning this type of bow will be at once swept away when he sees it in operation in a seaway. Instead of the concave or inverted V sections changing to convex or V sections forward, the inverted Vs become increasingly deep toward the bow, until they are swept up clear of the water-line altogether, the boat running forward on two sharp edges like sharpened sled runners.

"Another important feature is that the sides are not drawn in at the bow, but retain their full relative distance to the stem-head. The majority of modern hydroplanes are safe so long as their chines forward remain out of water; but if in a seaway at speed their incurving top-sides forward become submerged, it is possible that there will be trouble."

"A well-known engine manufacturer, after seeing Viper V running, stated that he believed that, if there were any method of getting this boat fully known at once, she would revolutionize small speed power boat design within two years; and one of the best-known boatmen, who has undoubtedly owned more and finer speed boats than anyone in the country, referred to her as the greatest little boat he had ever seen or ridden in."

The boat has surface propellers for which her designer claims the following advantages for speed:

"Engine position for direct drive is such that hull may be given minimum length consistent with seaworthiness, and so weight reduced to a minimum.

"No shaft, strut, propeller-boss or rudder-stock under water. Appendage resistance done away with.

"Shafts may be as large as desirable for strength without impairing efficiency of boat. Cavitation impossible; propellers cannot race in a seaway. Absolutely balanced helm; boat turns with equal readiness to starboard or port.

"Propellers are accessible and replaceable from the boat afloat."

With 20 horsepower the experimental Sea Sled did over 25 miles per hour, six runs over a mile course. Tests with a 40-horsepower engine in same hull have not been completed.

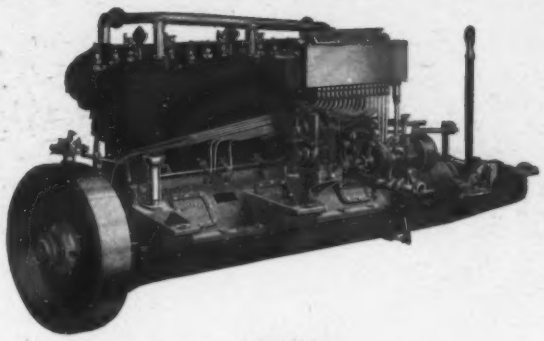
Mr. Hickman also claims for the side-plate rudders, shown in the photographs, that with them a boat can be steered to starboard or port more rapidly than any other type of hydroplane. Independent of the rapid action of the side-plate rudders, and owing to the peculiar outward curved surfaces of the underbody forward at the point where the inverted V sections are deepest, the listing of the hull by the action of the rudders brings these surfaces into action when they work as enlarged bow rudders, helping to swing the boat on a shorter radius.

Officers of the Williamsburgh Y. C.

The Williamsburgh Yacht Club has elected the following officers for the year 1913: Commodore, Francis V. Cihar; vice-commodore, A. Kling; rear commodore, M. Bock; secretary, William S. Richards; treasurer, Albert Gerken; fleet captain, John New. The club expects a very prosperous year for 1913.

Running in a heavy chop at 25 miles. Rising on a sea. Note that engine and ignition are unprotected, no spray going aboard

Bow down. Falling on a sea. Note the entire absence of spray at the sides. This pictures illustrates very well the impossibility of tripping the boat in a seaway



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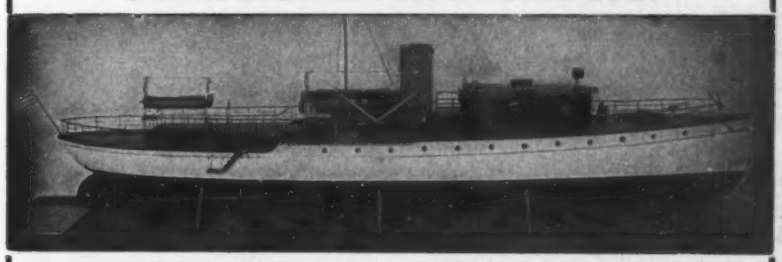

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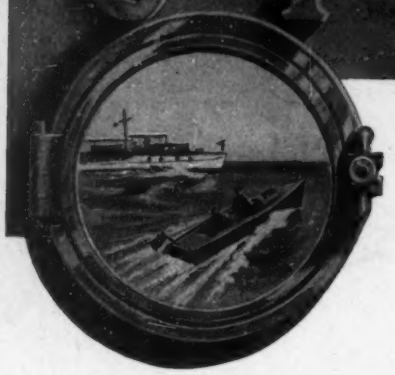
OF INTEREST TO THE SKIPPER



A Maxim Silencer for Your Exhaust

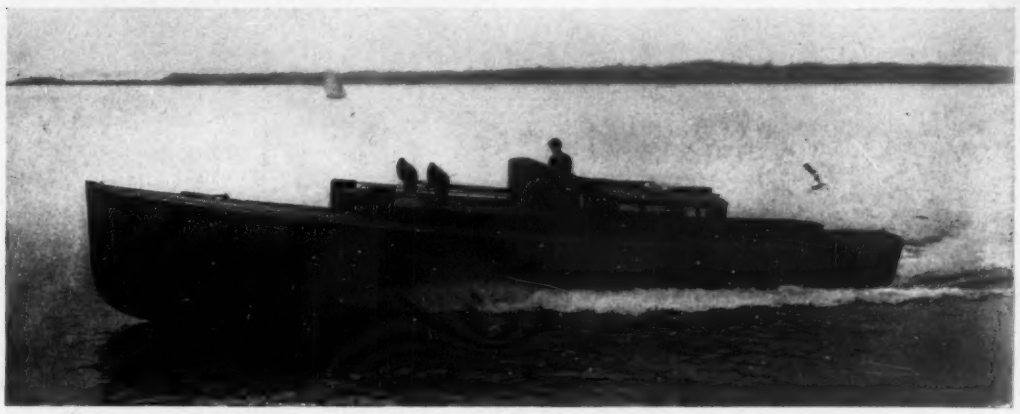
Those boat owners who have long wished for some method of stifling the noisy exhaust of their motors will be interested in hearing that Hiram Maxim has developed and put on the market a motor boat silencer that is meeting the approval of all who have seen it in operation. Since the gun silencer was perfected Mr. Maxim has been applying himself to adapting the principle of noise elimination to other forms of industrial endeavor. The motor boat silencer is the first of these inventions to be perfected, and Mr. Maxim is now working on an automobile engine silencer. There are both motor boat and auto-engine mufflers on the market, but they do not "silence" to the extent that is desired.

A Gray & Prior engine has been installed in the first floor of the West armory of the Colt works, where the Maxim Company is located, and the tests of the boat silencers were made on this engine. With the Maxim silencer attached the popping could not be detected at a distance of 30 feet away. The silencing of the noise is accomplished by utilizing the centrifugal force of the exhaust gases, and permitting them to whirl until their energy has been dissipated. There are three chambers surrounded by the outside shell of the silencer. The exhaust gases from the engine are led into the innermost of these chambers. The gases discharge tangentially into the next chamber and continue to whirl until friction slows them down, after which they escape into the third chamber, also tangentially. In this chamber they are again whirled, and their exit cannot occur while they have a high velocity. When they have slowed down enough to permit, they make their escape into the outer space practically noiselessly.

Back pressure is entirely avoided because no gas issuing from the engine encounters an obstruction, either in the form of a wall or of gases either stationary or moving in an opposite direction. As long as there are gases coming from the engine exhaust, they simply add themselves to the circumference of the whirling body of gas, which is traveling in the same direction. By the time the gases have passed through the three chambers, it is as if they had been spread out into a pipe of extremely large size. Naturally their passage is slow, and hence noiseless.

The silencers may be used either with or without cooling water. When used dry it is better to have the silencer ungalvanized so as to avoid all possibility of melting the galvanizing metal.

The Sterling Engine Company have recently received from the printer their new 1913 advertising folder, which is a forerunner of their catalogue. These folders show the entire line of Sterling engines with their dimensions and prices, and in addition have photographs of fourteen crack boats in which Sterling engines are installed. These boats embrace every kind of craft, from small speed boats, single-handed cruisers and international cup defenders to motor tugboats. The folder is exceptionally interesting. The Sterling Engine Company, of 1258 Niagara Street, Buffalo, N. Y., will be glad to send it free upon request.



Admiral's launch of the U. S. S. Louisiana, equipped with two 45-65 h.p. Sterling engines, which drive her 19 miles an hour

Sterling Engines in an Admiral's Launch

When the North Atlantic squadron was in New York recently much interest was shown in the new 50-foot admiral's barge which was attached to the U. S. S. Louisiana. This was a very fine looking boat, very different from the old steam launches of the navy and with much greater speed. The boat is 50 feet long, with a beam of 9 feet, and was built by the Herreshoff Manufacturing Company. She is equipped with two six-cylinder, 45-65-horsepower Sterling engines, which drive her at the rate of 19 miles per hour. The engines are located amidships under a hatch. The steersman's cockpit, protected by a wind shield, is just aft of this, while the stern of the boat is given over to the officers' cockpit and cabin.

The enlarged factory of the Buffalo Gasolene Motor Company

A New Buffalo Factory and Engine

It is always interesting to note the growth of a manufacturing business as evidenced in the outgrowing of its former buildings. And it is with pleasure that we reproduce here a photograph of the enlarged factory and new buildings of the Buffalo Gasolene Motor Company, on Niagara Street, Buffalo, as evidence not only of this firm's growing business but also of the worth of the engines they manufacture. The old plant of this company had to be greatly enlarged this year to take care of the increased business, and with the additions now added to the plant the Buffalo Gasolene Motor Company have one of the best equipped and modern factories for turning out gasolene motors in this country.

Prominent among the marine engines brought out during the past year by this company are two heavy-duty models with 10-inch bore and 12-inch stroke. These models were designed with a view to supplying an absolutely reliable and economical power plant for work boats and cruisers. They have six cylinders and four cylinders, respectively. Both have the same bore and stroke and a normal speed of 300 revolutions per minute. The six-cylinder has a nominal rating of 125 horsepower, and the four-cylinder engine is rated at 85 horsepower, although it actually develops much higher power.

Most of the engines built so far have been equipped for kerosene, because of its lower cost and the fact that it can be used with absolutely satisfactory results by the aid of the Buffalo kerosene device. Both the 125-horsepower and the 85-horsepower models are equipped with air starters and also with an emergency starter.

A Long Trip in a Little Boat

A long and interesting trip in a little boat has recently been made by E. J. Camp in a little 20-

THE UNITED STATES EQUIPS

THE SURF BOATS OF ITS

LIFE SAVING SERVICE

WITH

GENUINE HARTHAN PROPELLERS

See article, "Power Life Boats in the Life Saving Service," in this issue.

Where lives are at stake one doesn't take chances, and the selection of these propellers in preference to all others for so important a responsibility where absolutely uniform reliability and dependability are all important, speaks for itself.

All Genuine Harthan Propellers, whether for

SPEED, CRUISING or TOWING,

measure up to the highest possible standards. They are the wheels for those who want the **best.** They are no more expensive than most goods of inferior quality.

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THE HARTHAN PROPELLER Reg. U. S. Pat. Off. (TRADE MARK on each blade.)

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TRENTON NEW JERSEY

Never had to touch it

Wm. Newstead, engineer on the famous "Detroit" says—

"I never had to touch the oiler during the entire trip. Each feed was adjusted before leaving Detroit, and in spite of the rough weather and different engine speeds the oiler automatically took care of all the changing conditions.

"I examined the splash level in the crank case a number of times and always found it at just the right height, showing that the oiler always fed exactly as much oil as the engine used up. Every part of the engine was perfectly lubricated at all times, and we had no trouble of any kind. The oil consumption was very low."

For Every Kind of Engine

The Detroit Oiler starts and stops with the engine and automatically changes its rate of feed because it is driven from some moving part of the engine.

There is a Detroit Oiler for every engine. Made in all sizes and number of feeds with pulley, sprocket, ratchet or gear drive.

Write to-day for Catalog P-69 and full information.

DETROIT LUBRICATOR COMPANY.

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Let Us Tell You All About Motor Boat Fires

In every motor boat there is constant danger of fire. This type of fire is so difficult to get at and so menacing to occupants of the boat who may be miles from shore and at the mercy of the sea, that only one extinguisher has been devised which affords real protection. This extinguisher is **Pyrene.** Let us tell you all about motor boat fires.

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Pyrene MANUFACTURING CO.

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"Victor" Capstan

Strong Compact Efficient

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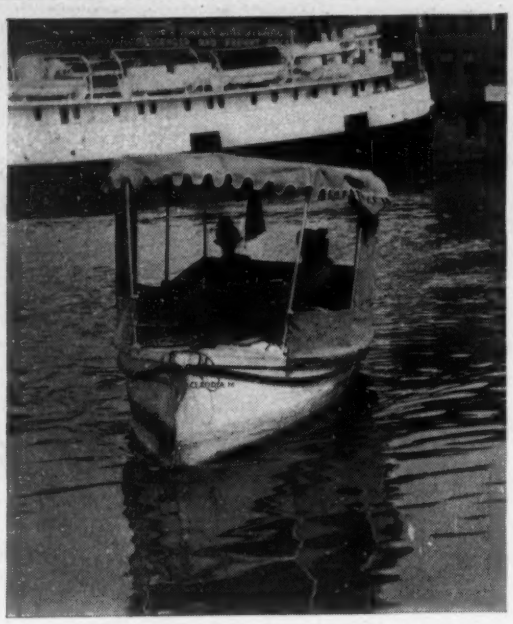


Claudia M., a little 20-footer equipped with 3½-h.p. Fairbanks-Morse motor

footer he built himself and powered with a 3½-horsepower Fairbanks Morse engine.

The trip from Union Pier, Mich., led across the southern end of Lake Michigan to the Wells Street Bridge pier in the Chicago River, and from there down the drainage canal to Lockport. From there the old canal was followed to La Salle. The remaining 250 miles to St. Louis was made by way of the Illinois and Mississippi Rivers. The original plan was to proceed by way of the Mississippi to New Orleans, then follow inland routes and the Gulf to Key West. Unfortunately, Mrs. Camp became ill on reaching St. Louis—therefore the long trip had to be given up.

Mr. Camp's experience with Southern waters and his intention of making a long trip, led to his building a shallow, flat-bottomed boat, especially adapted to river travel. His craft measures 20 feet in length by 5 feet 8 inches beam, is 28 inches deep and draws but 8 inches of water. The planking of the boat is cypress. The rail and top finish is oak. Gas pipe uprights carry a heavy canvas covering, arranged with side curtains to afford protection from wind and rain.

Crossing Lake Michigan really gave a very thorough test of what his little boat would do. Mr. Camp left Union Pier at 7 o'clock on the morning of October 2, and reached the Wells Street Bridge pier in the Chicago River at 8:35 in the evening. The 55-mile trip was made against a strong head wind and heavy sea, so that the time was remarkably good, considering that the power for the Claudia M. was furnished by a single-cylinder, 3½-horsepower Fairbanks-Morse engine. Mr. Camp had a chart of the southern part of the lake and steered his course by a pocket compass.

After reading a description of the Claudia M., ont naturally wonders why an engine of as small size was selected for so heavy a boat. In explanation, Mr. Camp stated that he had spent two winters in Florida, and there frequently made fishing trips out in the Gulf. All the boats he saw there were driven by Fairbanks-Morse engines, and very frequently a 3½-horsepower was all that was used. The first three or four times he found himself 40 miles out in the Gulf with one of these little engines as the only means of getting back to land, he doubted somewhat the judgment of the boat owners, but events proved that those old sea captains down there knew what they were about. In many instances engines that had seen fourteen years of service were still on the job, and, as their owners declared, "Ready to push the old boat anywhere if you give her the gas."

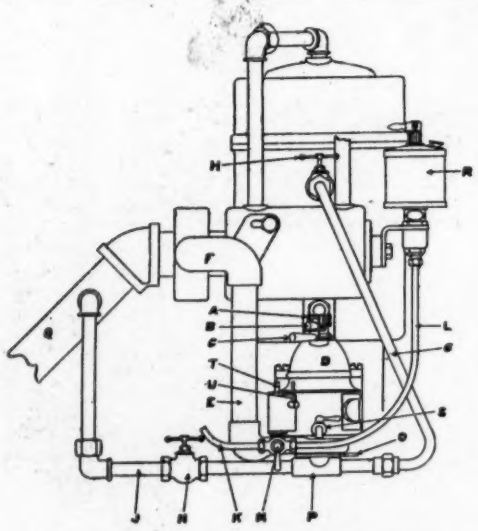
The trip across Lake Michigan was made without the engine losing a shot. In fact, no engine trouble at all developed at any time during the trip. The capacity of the gasolene tank is 12 gallons, and for the 55-mile trip across the lake only half this amount was required.

Using Kerosene in a Knox Motor

In an article in this issue of YACHTING on the rapid increase in the price of gasolene, the conclusion was reached that the growing use of kerosene-burning engines was assured in order to keep the cost of the fuel, and hence of operation, down. There has been some prejudice in the past against this kind of fuel by those who based their judgment on the earlier engines that burned kerosene, or were ignorant of the advantages the newer models offered in the matter of economy.

Speaking of a successful gasolene-kerosene carburetor made by the Camden Anchor-Rockland Machine Company for the Knox engine, Mr. John Bird, manager of the company, has this to say:

"While this carburetor was designed for our Knox marine motors it is working successfully on many other types of motors. The method of heating the fuel and passing it off as a gas is described below. The attachment is very simple, very compact, and I know it will do the trick. We have had it on the market now for over a year, and it has given excellent satisfaction. Of course, the operator prefers to work his motor on gasolene when he can, as with this model D carburetor you start the motor on gasolene and after a few minutes' run you are in a position to work on to kerosene. This is a little bother to the operator, and he will not do it until he is obliged to; but he will certainly be obliged to soon on account of the advance in price of gasolene. With our attachment and the model D carburetor, these motors will operate without carbonizing, and we find that they generate from 7 to 10 per cent more power and consume only about 2 per cent more fuel."

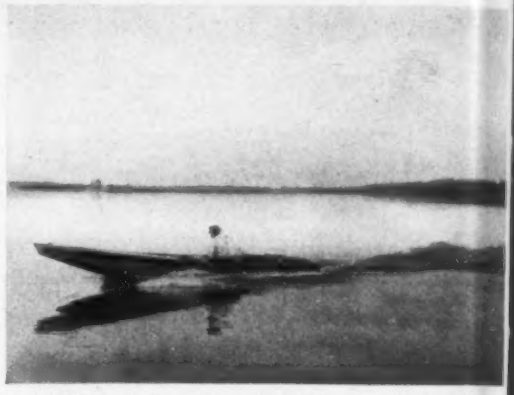


Kerosene attachment for Knox marine motor

The cut illustrates a Knox motor with carburetor attached ready to operate on kerosene. Fill cup marked *R* with gasolene. Turn on gasolene, to carburetor, by movement of three-way valve *M*. Start motor on gasolene, leaving relief cock or relief valve *H* wide open. Open escape valve *N*, which allows the hot gases from the motor to pass through carburetor out into vent pipe or exhaust. When heating chamber tee, *P*, is so hot you cannot put your hand on it, you are ready then to use kerosene for a fuel, and turn on the kerosene.

Eighteen Miles an Hour With a 12-H. P. Gray

An interesting little craft is shown in the cut herewith, which is from a photograph of a boat owned by W. L. Barsley, of Hamburg, Ill. This is a queerly constructed little craft, and is a flat-bottomed little affair with square bow and stern, built after the old glider plans that were popular several years ago. The interesting point is that the little boat makes 18 miles an hour with a 12-horsepower Gray motor.



A little flat-bottom glider that makes 18 miles an hour with a 12-h.p. Gray

A Motor Boat on Mt. McKinley

(*Continued from page* 33.)

The nails and other light hardware he obtained at Glacier, a nearby settlement, where the United States Commissioner for the Kantishna precinct resides. When he had built his boat there remained the work of removing the engine from the smaller launch into the big one. This accomplished, he fashioned a temporary rudder; and the craft, home-made and a credit to the ingenuity and resourcefulness of the "sourdough," was ready for launching.

At Fairbanks a few improvements were made to the craft and a "knuckle-joint" rudder made so that the boat could navigate over the sandbars common on the upper reaches of the Kantishna.

The boat is 32 feet long with a beam of 6 feet. It is equipped with a 5-horsepower engine, and is now in use freighting goods from the Tanana River to Henderson's and other miners' claims on the Kantishna.

Twelve Months in a "Spouter"

(*Continued from page* 38.)

and gleaming white teeth forever showing in the laughter of irresponsibility and perfect health.

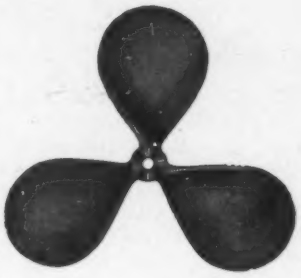
The captain ordered a bucket of hardtack brought out in honor of our guests. The biscuit were dumped in a pile on the main deck. The Eskimos gathered around in a solemn and dignified circle. The head man of the village divided the bread, giving an equal number of hardtack to each.

This ceremony of welcome over, the Eskimos were given the freedom of the ship—or at least took it. We kept a careful watch on them, however, to keep them from taking anything else. One or two of the Eskimo men had a sufficient smattering of English words at their command to be able to make themselves understood.

One pretty girl came up to me with a smile and an ingratiating air.

"Tobact," she said, holding out her hand.

I handed her my smoking plug. She took half of it at one bite and gave the remainder back to me, which I thought considerate. She enjoyed the tobacco. She chewed upon it hard, working her jaws as if she were masticating a dainty tidbit. Did she expectorate? Not a drop. She evidently did not propose to waste any of the



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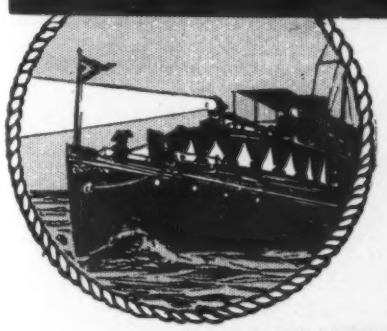

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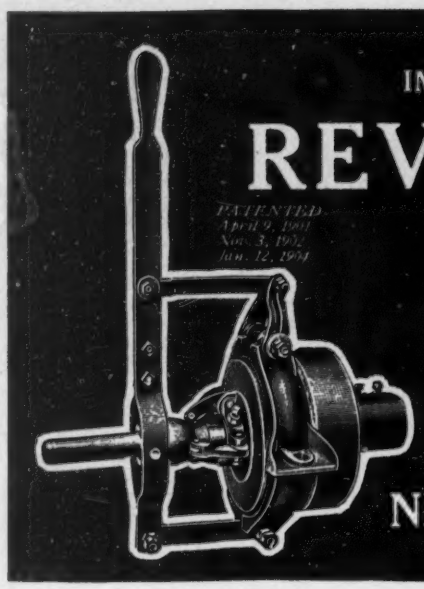

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flavor of that good weed. Neither did she get sick—that pretty Eskimo girl. At last, when she had chewed hard for twenty minutes or so, she removed her quid and stuck it behind her right ear. She chewed it at intervals later on, always between times wearing it conspicuously behind her ear. (*To be Continued.*)

The Corinthians of Marblehead

(Continued from page 16.)

In 1908, the Corinthians, jointly with the Royal Bermuda Yacht Club, gave a race to Bermuda, in which six vessels started. One of the club's boats, the schooner Dervish, owned and sailed by Commodore H. A. Morss, won in Class B. The Isle of Shoals race is a Corinthian classic, started in 1904. The course is about 70 miles, and the contests usually gave a run or reach going and a beat back. The first Shoals race brought out about thirty-five starters. In 1909, when the last race was given, interest was waning, explanation being that the event was getting altogether too tame. In 1910, the Corinthians gave the Cape Elizabeth lightship contest over a 145-mile course, the event ranking as important on account of size and number of entrants. About thirty yachts started and G. L. Batchelder's Dorello went the distance in 23 hours 18 minutes 06 seconds—a record that still stands. The success of the Cape Elizabeth race inspired the regatta committee to give a Cape Cod race, which was sailed the next season over a 95-mile course by nearly forty boats.

The Cape Cod race, for 1911, was won by Allen C. Jones' 22-foot sloop Nutmeg, which went the distance in 16 hours 47 minutes 25 seconds—remarkably fast time for so small a boat under not wholly favorable conditions. The Nutmeg has won upwards of 100 trophies, and is perhaps best known of the smaller sloops in Massachusetts waters and Long Island Sound. The club's burgee was carried to Chesapeake Bay in 1907 by Class Q sloops Little Rhody II, Dorothy Q and Eleanor, the former boat winning the exposition cup at Jamestown.

Class P yachts, or 31-raters, have figured largely in Corinthian events, and the Amoret, owned by Commodore Wheelock, holds two legs on the Lipton cup, which carries with it the championship of Massachusetts Bay. In 1910, three Class P boats, the Amoret, Italia and Timandra, met the New York 31-raters at Gravesend Bay, defeating the Gothamites. The Amoret had largest percentage in this series. Tables were turned, however, in an inter-State match off Marblehead in 1911, when the New Yorkers captured the series, with the Windward and Joyant battling against Amoret and Timandra.

Present officers of the Corinthian Yacht Club are: Commodore, Charles B. Wheelock, sloop Amoret; vice-commodore, John B. Fallon, sloop Timandra; rear-commodore, Lawrence F. Percival, launch Barracuda; secretary, Herbert S. Goodwin; treasurer, Fred W. Moore; fleet captain, George N. Proctor, Jr. Executive committee, C. B. Wheelock, J. B. Fallon, W. H. Joyce, F. W. Moore, W. L. Carlton, J. M. Ward, Andrew Raeburn.

From Nassau to New York

(*Continued from page 26.*)

steamer Zuburg. She had attempted to cross St. John's bar without a pilot, and not being familiar with the soundings was lost on the south jetty, after missing the channel by a few hundred feet only. Her decks were awash at high water and bristling with a troupe of actors and actresses, as supposed passengers and crew, and they and her battered sides have figured in moving picture shows throughout the past winter all over the country.

The old white auxiliary schooner yacht-like pilot boat Meta of 41 tons burden, and built as many years ago, presently attracted our attention and reciprocated our interest. From her station moorings we proceeded up the extremely well-buoyed, marked and lighted entrance to the harbor of Mayport, and anchored in a fine little cove just around the upper end of the great coal pier on the left bank, and found ourselves near the St. John's Bar Pilot's Association office and home.

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